DOCTORATE IN CLINICAL PSYCHOLOGY

Exploring socioeconomic and psychological factors associated with stress and difficulties in families

Running header: SOCIOECONOMIC DISADVANTAGE, PARENTAL STRESS & THE ROLE OF TRAIT MINDFULNESS

Anneka Attawar

Supervised by:

Dr Catrin Eames

Professor David Daley

5th June 2017

Submitted in partial fulfilment of the Doctorate in Clinical Psychology, University of Liverpool

Acknowledgements

First and foremost, I would like to thank the staff at the children's centres and nurseries who worked with me to recruit participants for the empirical study. Thank you for generously offering me your time and support for the project. Particular thanks to Peggy Ross, Julie Taylor, Doreen Newby, Jane Macmillan, Lynzi Rudge and Liz Parsons.

Additional thanks to Natasha Perkins and Beverley Williams, two local mums who met with me on a cold day in December to discuss the project and help me to develop my ideas. Thanks to Beverley's two-year-old daughter for putting up with this meeting too!

I am of course extremely grateful to all of the parents who generously offered their time to take part in the study. This research simply would not have taken place without your participation and support.

Thank you to my research supervisors, Catrin Eames and David Daley for your support with the project. Particular thanks to Catrin - your knowledge, guidance and reassurance has been invaluable.

A further thank you to my personal tutor, Andrea Flood. Your support and unwavering confidence in my ability encouraged me to keep going. Thanks also to Marcin Kwiatowski, my clinical placement supervisor, for your kindness, encouragement and understanding.

Thank you to my family for your support, and to my wonderful friends and fellow trainees. I feel very lucky to have had such a warm, fun and supportive cohort. Thank you to Donna O'Connor for being my quality assessment partner-in-crime. Thanks also to Laura Hawkins and Elizabeth Bickford-Smith for listening and being there. Shout out to EBS for reading through my work – you're the best!

Table of Contents

List of Tables

Chapter One

Chapter Two

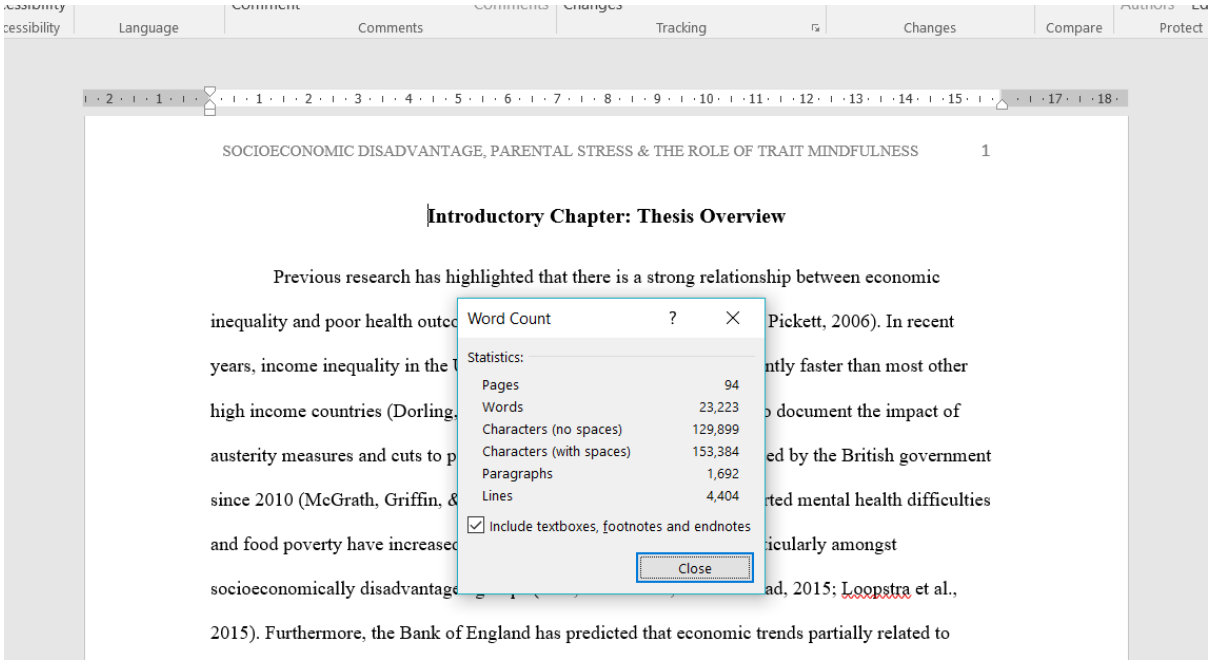
List of Figures

Chapter One

Chapter Two

List of Appendices

Word Count = 23,223 (excluding references)



Introductory Chapter: Thesis Overview

Previous research has highlighted that there is a strong relationship between economic inequality and poor health outcomes in affluent countries (Wilkinson & Pickett, 2006). In recent years, income inequality in the UK and the USA has increased significantly faster than most other high income countries (Dorling, 2015). Evidence is starting to emerge to document the impact of austerity measures and cuts to public services that have been implemented by the British government since 2010 (McGrath, Griffin, & Mundy, 2016). For example, self-reported mental health difficulties and food poverty have increased significantly over this time period, particularly amongst socioeconomically disadvantaged groups (Barr, Kinderman, & Whitehead, 2015; Loopstra et al., 2015). Furthermore, the Bank of England has predicted that economic trends partially related to 'Brexit' will mean that British households are to face a further drop in 'real term income' in 2017 (Merrick, 2017).

The family stress model highlights the negative impact of economic hardship on stress and difficulties within families (Conger et al., 1992). Parental stress refers specifically to the psychological distress arising from demands within the parenting role (Deater-Deckard, Pickering, Dunn, & Golding, 1998). Chapter one of this thesis presents a literature review on the relationship between socioeconomic status (SES) and parental stress within disadvantaged families. The review found evidence to suggest that economic hardship, lower educational attainment and food insecurity were associated with greater parental stress. There was a lack of evidence to suggest a relationship between income and employment status and parental stress. The findings have implications for how SES is measured in research and clinical practice, for example, regarding the importance of considering parents' subjective experience of economic hardship as well as their income bracket.

Chapter two presents an empirical study further exploring the relationship between SES, parental stress and psychological difficulties within a British population of parents. Furthermore, the role of 'trait mindfulness' is assessed as a potential protective factor in the relationship between SES, stress and family difficulties. There is a growing evidence base to suggest that mindfulness interventions may be useful in supporting parents who are experiencing difficulties (e.g. Coatsworth,

Duncan, Greenberg, & Nix, 2010; Eames, Crane, Gold, & Pratt, 2015). Mindfulness is the practice of paying attention to the present moment, consciously and non-judgmentally (Kabat-Zinn, 1994). 'Trait mindfulness' has been described as one's inherent ability to be 'mindful' in everyday life (Kabat-Zinn, 2003). Previous research suggests that trait mindfulness is a protective factor for psychological difficulties in parents of children with autism (Conner & White, 2014; Jones, Hastings, Totsika, Keane, & Rhule, 2014). To the author's knowledge, no prior research has studied the relevance of trait mindfulness in relation to parental socioeconomic background. The study did not find evidence to support the hypothesis that trait mindfulness moderated the relationship between SES and parental stress, depression, anxiety and child behavioural problems. When examining the variables individually, the study found that lower trait mindfulness predicted psychological problems in parents, but did not predict child behavioural problems. Furthermore, lower SES predicted child behavioural problems, but did not predict psychological problems in parents. The findings of the study suggest that trait mindfulness may be a protective factor for parents from diverse backgrounds. However, more research is needed to more fully investigate the role of trait mindfulness and other protective factors for socioeconomically disadvantaged families.

References

Barr, B., Kinderman, P., & Whitehead, M. (2015). Trends in mental health inequalities in England during a period of recession, austerity and welfare reform 2004 to 2013. *Social Science & Medicine, 147,* 324-331. doi: 10.1016/j.socscimed.2015.11.009

Coatsworth, J. D., Duncan, L., Greenberg, M., & Nix, R. (2010). Changing parents' mindfulness, child management skills and relationship quality with their youth: Results from a randomized pilot intervention trial. *Journal of Child and Family Studies, 19,* 203-217. doi: 10.1007/s10826-009-9304-8

Conger, R. D., Conger, K. J., Elder, G. H., Lorenz, F. O., Simons, R. L., & Whitbeck, L. B. (1992). A family process model of economic hardship and adjustment of early adolescent boys. *Child Development, 63*(3), 526-541. doi: 10.2307/1131344

Conner, C. M., & White, S. W. (2014). Stress in mothers of children with autism: Trait mindfulness as a protective factor. *Research in Autism Spectrum Disorders, 8,* 617 -624. doi: 10.1016/j.rasd.2014.02.001

Deater-Deckard, K., Pickering, K., Dunn, J. F., & Golding, J. (1998). Family structure and depressive symptoms in men preceding and following the birth of a child. *The American Journal of Psychiatry, 155*(6), 818-823. doi: 10.1176/ajp.155.6.818

Dorling, D. (2015). The mother of underlying causes - Economic ranking and health inequality. *Social Science & Medicine, 128,* 327-330. doi: 10.1016/j.socscimed.2015.01.008

Eames, C., Crane, R. S., Gold, E., & Pratt, S. (2015). Mindfulness-based wellbeing for socio -economically disadvantaged parents: A pre-post pilot study. *Journal of Children's Services, 10,* 2-33. doi: 10.1108/JCS-09-2014-0040

Jones, L., Hastings, R. P., Totsika, V., Keane, L., & Rhule, N. (2014). Child behaviour problems and parental well-being in families of children with autism: The mediating role of mindfulness and acceptance. *American Journal on Intellectual and Developmental Disabilities, 119,* 171 -185. doi: 10.1352/1944-7558-119.2.171

Kabat-Zinn, J. (1994). *Wherever you go, there you are: Mindfulness meditation for everyday life*. New York: Hyperion.

Kabat-Zinn, J. (2003). Mindfulness-based interventions in context: Past, present, and future. *Clinical Psychology: Science and Practice, 10*, 144-156. doi: 10.1093/clipsy/bpg016

Loopstra, R., Reeves, A., Taylor-Robinson, D., Barr, B., McKee, M., & Stickler, D. (2015). Austerity, sanctions and the rise of food banks in the UK. *BMJ, 350*, 1-6. doi: 10.1136/bmj.h1775

McGrath, L., Griffin, V., & Mundy, E. (2016). The psychological impact of austerity: A briefing paper by Psychologists Against Austerity. *Mental Health Nursing, 36*(1), 12-17.

Merrick, R. (2017). Brexit is already starting to make families poorer, Bank of England warns. *The Independent.* Retrieved from http://www.independent.co.uk.

Wilkinson, R. G., & Pickett, K. E. (2006). Income inequality and population health: A review and explanation of the evidence. *Social Science and Medicine, 62*(7), 1768-1784. doi: 10.1016/j.socscimed.2005.08.036

Chapter One: Literature Review

A systematic review of the evidence on the relationship between socioeconomic disadvantage and parental stress in disadvantaged families

[1] Article prepared for submission to *Parenting: Science and Practice* for peer review. Please see Appendix D for a copy of the journal guidelines for authors.

Abstract

Global trends in income inequality have led to a call for more research into the impact of socioeconomic disadvantage on mental health. The aim of this review was to examine the evidence on the relationship between socioeconomic status (SES) and parental stress in disadvantaged families. Furthermore, the review sought to explore the most important socioeconomic predictors of parental stress in this population. Three databases were searched (PsycINFO, CINAHL Plus, Social Sciences Citation Index) using predetermined search terms to identify relevant papers. Studies were included if they had used quantitative methods to assess the relationship between SES and parental stress in a disproportionally disadvantaged sample. Sixteen studies were identified and the findings indicated that economic hardship, lower educational attainment and food insecurity were significant predictors of parental stress in the population studied. However, evidence on the impact of family income and employment status was weak and inconsistent. Therefore, overall, the evidence on the relationship between SES and parental stress was inconclusive. The implications of the review are limited because all of the studies included were conducted in the USA. Thus, it is indicated that further research is needed to more fully understand the impact of socioeconomic disadvantage on parental stress in British families.

Key words: Socioeconomic status, socioeconomic disadvantage, parental stress, parents, families, systematic review

Introduction

Austerity and Poverty in the UK and Globally

The 2008 financial crisis led the UK government to introduce a series of 'austerity measures' and spending cuts to public services in 2010 (De Agostini, Hills, & Sutherland, 2014). Evidence suggests that such measures have had a negative impact on the poorest people in society and that wealth inequality has increased (McGrath, Griffin, & Mundy, 2016). Since the 'age of austerity,' trends have started to emerge, such as the rise in the use of food banks (Cooper & Dumpleton, 2013), the increase in prescriptions for antidepressant medication (Spence, Roberts, Ariti, & Bardsley, 2014), and the closure of hundreds of children's centres (McGrath et al., 2016). Psychologists have highlighted the negative impact of recent British economic policies on mental health (McGrath et al., 2016) and there has been a call for psychologists to act as agents for social change and to look 'outwards' rather than 'inwards' for causes of psychological distress (Smail, 2005). Further understanding the impact of socioeconomic disadvantage on psychological wellbeing has been highlighted as a research priority (Garratt, Chandola, Purdam, & Wood, 2016).

In the UK, figures estimate that around 3.9 million children are living in poverty (Tinson et al., 2016). This figure equates to approximately 29% of children living in households with incomes less than 60% the national median (Tinson et al., 2016). Due to governmental changes to the welfare system the Institute of Fiscal Studies has predicted that the number of children in poverty will rise substantially by 2020 (Browne & Hood, 2016). Thus, a growing number of British families are being placed under greater economic strain, increasing the risk of stress and mental health difficulties in this population (McGrath et al., 2016).

Globally, evidence suggests that income inequality has risen rapidly in most economically developed countries over the past three decades (Pickett & Wilkinson, 2015). Dorling (2015) found that income inequality in the UK was far greater than the four other large Western European countries (namely, Germany, France, Italy and Spain). The UK is close to approaching similar levels of the extreme income and wealth inequality found in the USA (Dorling, 2015). Child poverty has long been a problem in the USA and has worsened since the 2008 recession. It was estimated that in 2014,

approximately 40% of children in the USA (31.4 million) lived close to or below the poverty line (Jiang, Ekono, & Skinner, 2016).

Poverty and Socioeconomic Status

Relative poverty is the concept most often used in Western countries, and is usually measured by calculating income or resources in relation to the national average (Katz, Corlyon, La Placa, & Hunter, 2007). Socioeconomic status (SES) is less well defined and there exists considerable debate on how it is measured (Bradley & Corwyn, 2002). SES considers both economic position and social status or prestige (McLoyd, 1998), and Bradley and Corwyn (2002) determine SES according to one's access to financial capital (material resources), human capital (non-material resources such as education) and social capital (resources gained through social relationships). The most common indicators of SES used in research are income, education and occupation (Adler & Ostrove, 1999).

There is strong empirical evidence on the negative impact of socioeconomic inequality on health (Dorling, 2015). People from deprived communities are more likely to suffer ill health and premature death than those from more affluent backgrounds (Jack, 2000). The negative impact of socioeconomic deprivation extends specifically to the health and wellbeing of children and families (Barnett, 2008), and families with children are more likely to have lower incomes than families without children (Garratt et al., 2016). Research suggests that children from lower SES backgrounds are at elevated risk of attachment problems with caregivers (Lyons-Ruth, Easterbrooks, & Cibelli, 1997), emotional and behavioural problems (Costello, Keeler & Angold, 2001) and poor educational outcomes (Kiernan & Mensah, 2009).

The family stress model was developed by Conger and colleagues (1992) through examining the mediating role of parents in the relationship between economic hardship and poor child outcomes. The model proposes that economic hardship (which includes objective factors such as income level, debt to asset ratio and income loss) leads to feelings of financial 'pressure' which is conceptualised as the implication or perception of economic hardship (e.g. the perception that bills cannot be paid). The experience of financial pressure thus leads to increased psychological distress in parents and harsh parenting, which in turn negatively influences the wellbeing and development of children. The model

has been supported in subsequent studies (e.g. Benner & Kim, 2010; Parke et al., 2004) and there is robust evidence to suggest a positive association between economic difficulties, parental psychological distress (e.g. depression, anxiety and anger) and harsh and inconsistent parenting (Barnett, 2008). Although the family stress model focuses on the experience of economic hardship, Conger, Conger and Martin (2010) have proposed that the model would predict similar outcomes for parents with lower educational and occupational attainment.

Parental Stress

Much of the research assessing the relationship between SES and psychological distress in parents has focused on parental depression (Newland, Crnic, Cox, & Mills-Koonce, 2013). However, it is also evidenced that parents from lower SES backgrounds are at increased risk of experiencing greater parental stress (Deater-Deckard, Pickering, Dunn, & Golding, 1998). Parental stress can be defined as the psychological distress that arises from the demands of parenting (Deater-Deckard et al., 1998). Parental stress is distinct from stress in other domains and can emerge when parents' perceived competency and access to resources do not match the demands of the parenting role (Zhang, Eamon, & Zhan, 2015). Thus, parenting may be experienced as more stressful when parents have less knowledge, perceived competence, support from others and when the child's behaviour is perceived as difficult (Deater-Deckard et al., 1998). While it has been acknowledged that all parents experience parental stress to a degree, research has highlighted that higher levels of parental stress can increase the risk of child behavioural problems (Henninger & Luze, 2014), maternal depression (Hammen, 2005) and child maltreatment and abuse (Crouch & Behl, 2001).

Aims and Objectives

This review aims to summarise the literature on the association between SES and parental stress in socioeconomically disadvantaged families. To the author's knowledge, no other reviews have been undertaken to explore this relationship.

Given the context of widening income inequality in the Western world, the American Psychological Society (APA, 2007) has advocated further research into the effects of socioeconomic

position on the health and wellbeing of individuals and their families. Research focusing specifically on lower income groups (e.g. ethnic minorities) is limited (APA, 2007).

Conger and colleagues (2010) have highlighted that much of the family stress research has focused on the economic aspects of SES. Factors such as educational and occupational status are often ignored or considered to be less important. This review therefore aims to explore the impact of specific indicators of SES, including education and employment as well as economic factors. In the current political climate of limited resources and cut-backs, identifying families most at risk of parental stress and in need of help and support is essential. This is particularly important given that parental stress is a risk factor for other difficulties (e.g. behavioural problems in children; Henninger & Luze, 2014).

This systematic review will therefore aim to answer the following two questions: 1) What is the evidence that there is a negative relationship between SES and parental stress in socioeconomically disadvantaged families? 2) What are the most important socioeconomic predictors of parental stress in this population?

Method

Before undertaking the review, a protocol was developed to guide the process (see Appendix A). Whilst the review was primarily undertaken by the primary researcher (AA), a second researcher (DO) also quality assessed the final papers included.

Search Strategy

Three electronic databases were searched, namely PsycINFO, CINAHL Plus and Social Sciences Citation Index. The databases were searched from inception until December 2016. The following key words were used when searching in each database: ("socioeconomic" or socio-economic" or "socio economic" or "social class" or "social status" or income or poverty or poor or disadvantage* or depriv* or economic or financial) AND ("parenting stress" or "parental stress").

A total of 1891 articles were generated from the searches and imported into the reference management software package Endnote X7. Following the removal of duplicate articles, the titles and

abstracts were screened using the eligibility criteria. Second, the full texts of relevant articles were screened using a similar process. Following this stage, the reference lists of the included articles were checked to identify further relevant papers. Figure 1 outlines the screening process in further detail, in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines (PRISMA; Moher, Liberati, Tetzlaff, & Altman, 2009).

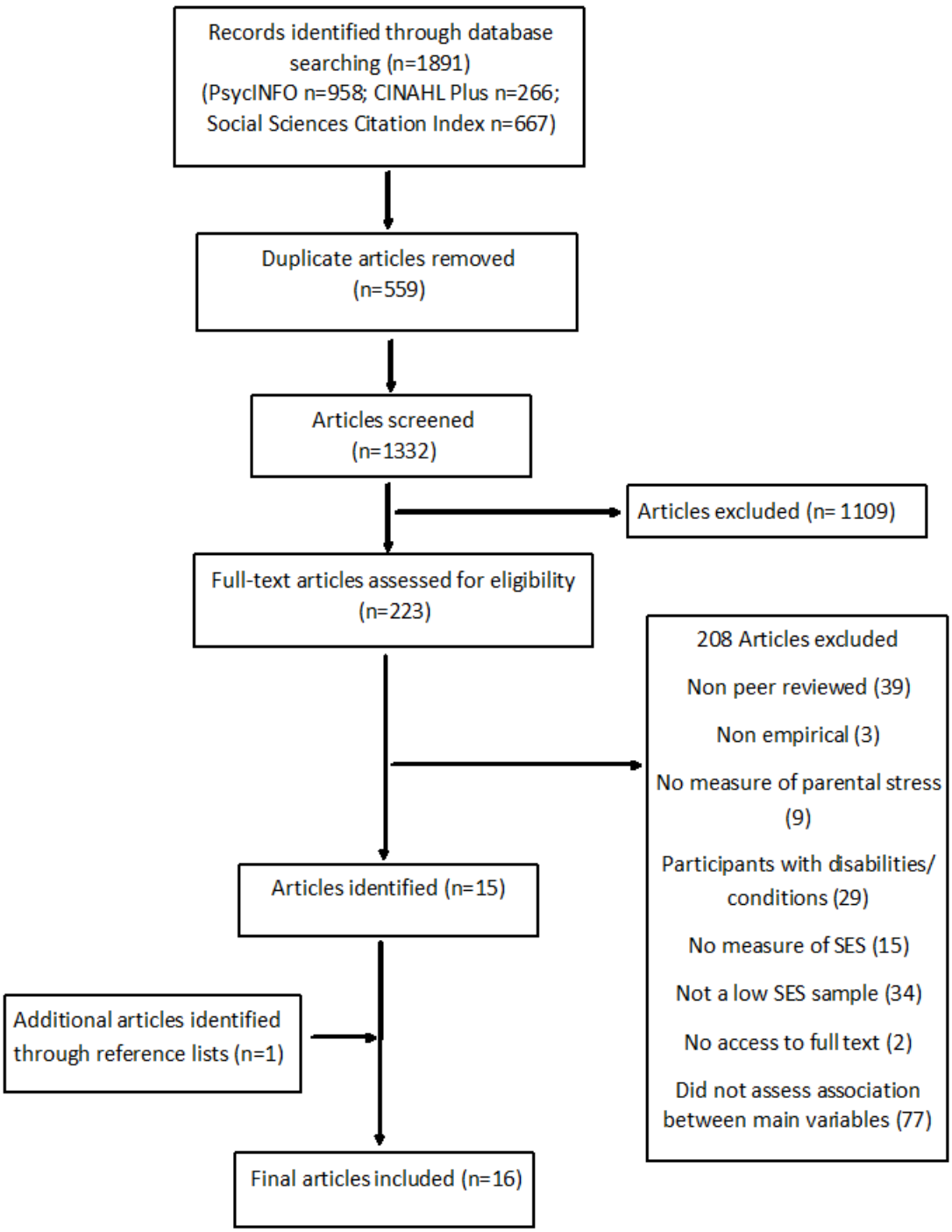


Figure 1. PRISMA diagram of study selection process.

Inclusion and Exclusion Criteria

A number of specific inclusion and exclusion criteria were utilised to identify the most relevant papers for review. Papers that were included had to a) be written in English; b) include a sample of parents or primary caregivers with a child under the age of 18; c) include a measure of parental stress; d) include a measure of SES (e.g. family income, economic hardship, educational status); e) include an overrepresentation of parents from a low SES background (i.e. more than half the sample were identified as having a low income, low educational status, or low employment status; and f) include quantitative studies that had used methods to assess the relationship between a measure of SES and parental stress.

Papers were excluded if they did not satisfy the above criteria. Additional exclusion criteria included a) qualitative studies; b) papers that were not published in a peer reviewed journal; c) non empirical papers (e.g. government reports, book chapters, systematic reviews); d) non-Western studies; e) studies which had focused on parents and/or children with specific conditions, disabilities or disorders (e.g. learning disabilities, personality disorders, HIV, cancer); f) studies which had not assessed the specific relationship between SES and parental stress; and g) studies which did not largely constitute parents from a low SES background.

Data Extraction and Synthesis

Data extraction of the included studies was undertaken by the primary author (AA). The characteristics of the studies, including relevant information about the participants and the main outcomes are documented in Table 1. The data extraction table (see Table 1) was developed through discussion with the second researcher (DO). Due to the heterogeneity of the outcome measures used in each study, a meta-analysis of the findings was not possible. As such, a narrative synthesis of the results was undertaken as presented below.

Quality Assessment

Methodological quality of included papers was independently assessed by both researchers (AA and DO) using a quality assessment tool adapted from the Agency for Healthcare Research and

Quality (Williams, Plassman, Burke, Holsinger, & Benjamin, 2010). This tool was chosen due to its applicability in assessing the quality of quantitative observational studies. The tool rates whether each study has met, not met or partially met criteria in several methodological areas. See Appendix B for the version of the tool that was adapted for this review. The ratings of each researcher were combined (see Table 2), with disagreements resolved through discussion. Appendix C provides details of the quality assessment ratings originally provided by the second researcher (DO). Inter-rater reliability between the two researchers was high with a kappa score of .87.

Results

Study Characteristics

Study characteristics are detailed in Table 1. Five of the studies used a cross sectional design and 11 studies used a longitudinal design. All of the studies were conducted in the USA. Ten studies used data from pre-existing studies and six studies conducted primary research. Most studies had a higher number of female caregivers than male caregivers (*n* = 15), where 12 studies focused exclusively on mothers. However, one study did not specify the gender of the caregivers (Slack & Yoo, 2005). The majority of the studies had a larger proportion of participants from ethnic minorities (*n* = 13). However, the ethnicity of participants was not specified in one study (Coley & Schindler, 2008). The children in the studies varied in age from new-born to 18 years old; however, most studies used a sample of children aged five or below (*n* = 11). The most common measure of parental stress used was the Parental Stress Index-Short Form (PSI-SF; Abidin, 1995; *n* = 8). The remaining studies used an adapted version of the Parental Stress Index (*n* = 8; PSI; Abidin, 1983) or another non-validated measure (*n* = 3).

Table 1
Study Characteristics and Data Extraction

Author(s), Year, Country	**Design**	**Data Source**	**Study *N* (parents)**	**Parent (% female, % White, % Black, % Hispanic, % single, mean age [SD, range], income)**	**Child (% female, mean age [SD, range])**	**Measure of parental stress**	**Measure of SES**	**Outcome**
Anderson (2008), USA	Cross sectional	Secondary data from parents recruited for SAMSHA programme and matched control group (7 sites)	824	91.1% female, 41.1% White, 20.6% Black, 31.7% Hispanic, 36.7%, single, 41 years (45.5, 18-50), 25.4% with annual income < $10,000	12.1 years (2, 10-18)	PSI-SF	Annual household income Parent education	No association was found between household income and parental stress. Parent education significantly predicted parental stress.
Budd et al. (2006), USA	Longitudinal	Primary data from adolescent mothers in foster care recruited through community caseworkers	49	100% female, 0% White, 86% Black, 4% Hispanic, 17 years at time 1 (1.1, 14-18), 19 years at time 2 (1.1, 16-20)	8.2 months at time 1 (5, 2-20)	PSI-SF	Parent education	Educational status was a significant predictor of parental stress.
Can & Ginsburg-Block (2016), USA	Cross sectional	Primary data from families attending an early learning centre on a college campus and from 7 urban Head Start centres	77	72% female, 4% White, 55% Black, 25% Hispanic, 27% single	3-5 years	PSI-SF	Parent education	A negative association between parent education and parental stress was found.

Author(s), Year, Country	Design	Data Source	Study *N* (parents)	Parent (% female, % White, % Black, % Hispanic, % single, mean age [SD, range], income)	Child (% female, mean age [SD, range])	Measure of parental stress	Measure of SES	Outcome
Choi & Pyun (2014), USA	Longitudinal	Secondary data from a subsample of the longitudinal FFCW study which followed families recruited from 75 hospitals across 20 cities	679	100% female, 15.3% White, 72.9% Black, 100% single, 24.3 years at time 1 (5.2, 18-50), 70.5% with annual income < $10,000	47.5% female, 0-5 years	PSI-SF (adapted version)	Non-resident fathers' financial support Maternal economic hardship	Fathers' financial support and maternal economic hardship predicted parental stress in mothers.
Coley & Schindler (2008), USA	Longitudinal	Secondary data from a longitudinal study following families after welfare reform (Welfare Children and Families: A Three City Study)	402	100% female, $760/month (mean at time 1)	12.7 months at time 1 (6.7, 0-23), 29.3 months at time 2 (7.4, 14-46)	Non-validated measure	Fathers' economic contributions (cash and non-cash)	Father economic support did not significantly predict parental stress. However, there was a significant negative association was found between father economic support and parental stress only in resident father-families.
Combs-Orme et al. (2004), USA	Longitudinal	Primary data collected from new mothers at a hospital	246	100% female, 58.1% White, 41.9% Black, 39.5% single, 78% aged 16-29 years, 40.4% with annual income < $10,000	New-born at time 1, 6-12 months at time 2	PSI-SF	Annual income Parent education	No association was found between household income and parental stress. Parent education significantly predicted parental stress.

Author(s), Year, Country	Design	Data Source	Study *N* (parents)	Parent (% female, % White, % Black, % Hispanic, % single, mean age [SD, range], income)	Child (% female, mean age [SD, range])	Measure of parental stress	Measure of SES	Outcome
Gyamfi et al. (2001), USA	Cross sectional	Primary data from a sample of current and former welfare recipients recruited from an administration service involved in welfare and employment programmes	188	100% female, 100% Black, 100% single, 28.6 years (5.1)	39.5% female, 4.7 years (7.41, 3-5)	7 items from PSI-SF	Maternal education Economic strain	A negative association was found between maternal education and parental stress in both groups. There was a positive association between financial strain and parental stress only in the employed group. Education, employment status and financial strain predicted parental stress.
Harden et al. (2014), USA	Longitudinal	Primary data from mother-child dyads attending Early Head Start centres	81	100% female, 1.2% White, 80.2% Black, 4.9% Hispanic, 65.4% single, 25.3 years at time 1 (6.73)	51.9% female, 16.7 months at time 1 (5.69), 26 months at time 2 (6)	PSI-SF	Cumulative risk index (based on 7 risk factors)	A non-significant correlation was found between cumulative risk and parental stress.
Henninger & Luze (2014), USA	Longitudinal	Secondary data from the EHSRE project - a cross site national study	1067	100% female, 37.8% White, 32.1% Black, 23.9% Hispanic, 23.8 years at time 1 (14-46), 34.5 years at time 5 (23-58)	47.1% female, 14 months at time 1, 10 years at time 5	PSI-SF (one subscale)	Poverty score (based on income and number of people in household)	No significant associations were found between poverty and parental stress.

Author(s), Year, Country	Design	Data Source	Study *N* (parents)	Parent (% female, % White, % Black, % Hispanic, % single, mean age [SD, range], income)	Child (% female, mean age [SD, range])	Measure of parental stress	Measure of SES	Outcome
Huang et al. (2010), USA	Longitudinal	Secondary data from the PSID – a longitudinal study collecting demographic information from a nationally representative sample of families	249	43.2% female, 30% Black, 47% single, 34.9 years at time 1 (7.1), 39 years at time 2 (7.2), $24500 mean annual income (SD 14700)	54.7% female, 7.5 years (2.87) at time 1, 11.7 years (2.8) at time 2	Non-validated measure	Household food insecurity	A positive association was found between food insecurity and parental stress.
Malik et al. (2007), USA	Cross sectional	Secondary data from 5 Early Head Start programmes	270	100% female, 17% White, 47.1% Black, 32.9% Hispanic, 61.4% single, 26.1 years (6.6, 15-72), mean monthly income $1107.9 (SD 667.42, range 0-3500)	24.9 months (7.9, 12-43)	PSI-SF (adapted version)	Employment status Parent education Monthly income	Significant negative associations between parent education, income and parental stress. A significant positive association between parent education and parenting distress. No association between employment and parental stress.
Rafferty et al. (2010), USA	Longitudinal	Secondary data from the EHSRE	2040	100% female, 40.6% White, 32.5% Black, 22.5% Hispanic, 46% single, 23 years at time 1 (5.8)	14 months at time 1, 36 months at time 3	PSI-SF (one subscale)	FRS Parent education	Maternal education and family resources were both significant predictors of parental stress.

Author(s), Year, Country	Design	Data Source	Study *N* (parents)	Parent (% female, % White, % Black, % Hispanic, % single, mean age [SD, range], income)	Child (% female, mean age [SD, range])	Measure of parental stress	Measure of SES	Outcome
Raikes & Thompson (2005), USA	Longitudinal	Primary data collected from mothers enrolled at one Early Head Start Centre, part of the wider EHSRE study	65	100% female, 66.2% White, 24.6% Black, mean annual income $12818 (SD 8784)	48% female, 2 – 36 months	PSI-SF (one subscale)	Annual household income	Family income was a significant predictor of parental stress.
Ryan et al. (2009), USA	Longitudinal	Secondary data collected from first two waves of FFCW	2736	100% female, 16% White, 57% Black, 25% Hispanic, 50% below poverty line	New-born at time one, 12 months at time 2	Non-validated measure	Maternal material hardship (household income and father financial support)	Mothers' household income had a negative association with parental stress. Material hardship was positively correlated with parental stress. Material hardship mediated the relationship between relationship trajectories and mothers' parental stress.
Slack & Yoo (2005), USA	Longitudinal	Secondary data from first and second waves of IFS – a longitudinal study of parents transitioning from welfare to work	1212	79% Black, Mean annual income range of $7500-$9999	48% female, 6.4 years (1.4, 3-12)	PSI (adapted version)	Food Hardship Annual income Economic hardship	Significant positive associations were found between food hardship, economic hardship and parental stress. There was no association between income and parental stress.

Author(s), Year, Country	Design	Data Source	Study *N* (parents)	Parent (% female, % White, % Black, % Hispanic, % single, mean age [SD, range], income)	Child (% female, mean age [SD, range])	Measure of parental stress	Measure of SES	Outcome
Zhang et al. (2015), USA	Longitudinal	Secondary data from wave 3 of FFCW	2115	100% female, 14.3% White, 62% Black, 23.2% Hispanic, 59% single, 26.8 years (5.7, 16-50), 53.8% below poverty line	47.4% female, 3-5 years	PSI (adapted version)	Maternal education Material hardship	Education level was negatively associated with parental stress.

Note: SAMSHA = Substance Abuse and Mental Health Services Administration; PSI-SF = Parenting Stress Index-Short Form; FFCW = Fragile Families and Child Wellbeing Study; EHSRE = Early Head Start Research and Evaluation Project; PSID = Panel Study of Income Dynamics; FRS = Family Resources Scale; IFS = Illinois Families Study.

Study Quality

The results from the quality assessment of the included studies are presented in Table 2. A relative strength of the papers was the description given of the study participants. In the majority of studies (n = 12), a detailed description of the families was provided, including relevant demographic information about the parents and their children (e.g. age, gender, ethnicity, income, marital status). Upon considering potential bias in the selection of the study cohort, the majority of studies received a rating of 'partial' (n = 12). Whilst the inclusion and exclusion criteria of studies was usually clearly described, it was often unclear whether random recruitment methods were employed. Some studies used convenience sampling methods, and many used data from pre-existing datasets. Thus, the representativeness of some of the study samples can be questioned. Most of the studies (n = 14) failed to report conducting a power analysis or to describe any other basis for determining the sample size. This can be considered a relative weakness because it is likely that the studies with small sample sizes were underpowered. Approximately half of the studies used a validated and reliable measure of parental stress. However, a large proportion of studies used modified versions of established measures which are likely to have lacked content validity and reliability. Many of the studies (n = 7) explicitly controlled for confounding variables in the analysis of their studies (e.g. parent age or ethnicity). The majority of the remaining studies were rated as 'partial' (n = 8) for this item because, whilst some studies did not explicitly include covariates, they often included several important demographic variables in their analysis that would have usually been included as controls.

Table 2
Study Quality

Study	Unbiased selection of cohort	Sample size calculated	Adequate description of the cohort	Validated method for ascertaining parenting stress	Adequate handling of missing data	Analysis controls for confounding data
Anderson 2008	Partial	No	Yes	Yes	Partial	Partial
Budd et al. 2006	Partial	Partial	Yes	Yes	Partial	Partial
Can & Ginsburg-Block 2016	Partial	Partial	Yes	Yes	No	Partial
Choi & Pyun 2014	Partial	No	Yes	No	Partial	No
Coley & Schindler 2008	Yes	No	No	No	Yes	Partial
Combs-Orme et al 2004	Partial	No	Yes	Yes	Yes	Partial
Gyamfi et al. 2001	Yes	No	Yes	No	No	Yes
Harden et al. 2014	Partial	No	Yes	Yes	Partial	Partial
Henninger & Luze 2014	Partial	No	Yes	Yes	Yes	Partial
Huang et al. 2010	Partial	No	Yes	No	No	Yes
Malik et al. 2007	Partial	No	Yes	No	Yes	Partial
Rafferty et al. 2010	Partial	No	Partial	Yes	Yes	Yes
Raikes & Thompson 2005	Partial	No	Partial	Yes	No	Yes
Ryan et al. 2009	Partial	No	Yes	No	No	Yes
Slack & Yoo 2005	Yes	No	Partial	No	Partial	Yes
Zhang et al. 2015	Yes	No	Yes	No	Yes	Yes

Study Findings

Household income.

Three out of the six studies which measured family income found a significant relationship between income and parental stress. Malik and colleagues (2007) found that there was a negative correlation between monthly income and the 'parental distress' subscale of the PSI-SF (Abidin, 1995; r = -.14, p < .05). However, income was not significantly correlated with the total stress scale. Raikes and Thompson (2005) found a marginally significant negative correlation between annual household income and the parental distress subscale of the PSI-SF (Abidin, 1995; r = -.22, p < .10). A further regression analysis showed that having a lower income approached significance as a predictor of higher parental distress (β = -.20, p < .10). Ryan, Tolani and Brooks-Gunn (2009) assessed income by considering mothers' yearly income, including formal and informal economic support provided by the child's father. Correlation analysis revealed a negative association between income and parental stress (r = -.11, p < .001). Studies by Anderson (2008), Combs-Orme, Cain and Wilson (2004), and Slack and Yoo (2005) did not find a significant relationship between income and parental stress.

Fathers' economic contributions.

Two studies assessed the specific relationship between fathers' economic contributions and parental stress. Choi and Pyun (2014) asked mothers how much child support payments were given to them by the child's non-resident father. Structured equation modelling revealed a marginally significant path between paternal financial support and maternal parental stress (β = -.12, p < .10). Coley and Schindler (2008) assessed fathers' contributions (from both resident and non-resident fathers) by asking about monthly cash and non-cash contributions. For the group as a whole, a non-significant association was found between fathers' contributions and parental stress. However, a marginally significant negative association was found between father economic support and parental stress only in resident father-families (F(1,135) ranges from 2.63 to 3.68, p ranges from .05 to .11).

Family resources and poverty.

One study assessed the relationship between 'family resources' and parental stress. Rafferty, Griffin and Robokos (2010) used a modified version of the Family Resources Scale (FRS; Dunst & Leet, 1987) which assessed the adequacy of both physical and human resources such as food, shelter, money to pay bills and time to be with family and friends. Lower family resources (measured when the baby was 14 months old) predicted higher scores on the parental distress subscale of PSI-SF (Abidin, 1995; at 36 months old; β = -.08, $p < .001$).

One study assessed the relationship between poverty and parental stress. Henninger and Luze (2014) created a poverty score using a combination of household income and number of people living in the household. No association was found between poverty score and parental stress across any of the 4-time points.

Economic hardship.

The association between economic hardship and parental stress was assessed in five studies. All studies found a significant relationship between economic hardship and parental stress. Choi and Puyn (2014) assessed the financial difficulties of single mothers using a 12-item scale asking questions about difficulties in the last 12 months (e.g. 'Did you go hungry?' 'Did you not pay the full amount of rent or mortgage payment?' 'Did you borrow money from friends or family?'). Structural equation modelling suggested that higher levels of economic hardship predicted more parental stress (β = .12, $p < .01$).

Gyamfi, Brooks-Gunn and Jackson (2001) measured economic strain using a 3-item scale with questions such as how often participants had borrowed money from family or friends. Correlation analysis revealed that economic strain was positively associated with parental stress in the employed group of mothers (r = .25, $p < .05$). However, there was a non-significant correlation in the unemployed group. In a second regression analysis, where the whole group was considered, greater financial strain approached significance as a predictor of greater parental stress (β = .15, $p < .10$).

Ryan and colleagues (2009) used a 12-item scale to assess mothers' material hardship (e.g. questions relating to ability to pay rent and bills). In a correlation analysis, a significant relationship was found between material hardship and parental stress ($r = .14$, $p < .001$).

Slack and Yoo (2005) measured economic hardship using a scale from the Minnesota Family Investment Programme Survey (Child Trends, 1999). Items included, for example, 'I worry about not having enough money in the future' and 'these days I can generally afford to buy the things we need.' Correlation analysis revealed a significant association between economic hardship and parental stress in both the group of parents with children aged 3-5 years old ($r = .24$, $p < .001$), and in the group of parents with children aged 6-12 years old ($r = .19$, $p < .001$).

Zhang and colleagues (2015) assessed material hardship using a 10-item measure, including questions such as whether mothers had received free food, or struggled to pay bills. Regression analysis indicated that greater material hardship predicted greater levels of parental stress ($\beta = .50$, $p < .001$).

Food insecurity.

Two studies assessed the relationship between food insecurity and parental stress, and both studies found significant associations between the two variables. Huang, Matta Oshima and Kim (2010) measured household food insecurity using an 18-item scale that asked participants about food related experiences over the past 12 months (e.g. 'we worried about our food running out before we had the chance to buy more'). Correlation analysis showed that there was a positive relationship between food insecurity and parental stress ($r = .16$, $p < .001$). Slack and Yoo (2005) used a 4-item measure to assess food insecurity (specifically in children) in the last 12 months (e.g. 'how often were you unable to feed your children a balanced meal because there wasn't enough money for food?'). Correlation analysis revealed that food hardship was positively associated with parental stress in parents of children aged 3-5 years old ($r = .37$, $p < .001$) and in parents of children 6-12 years old ($r = .24$, $p < .001$).

Employment.

Two studies looked at the association between employment and parental stress. Gyamfi and colleagues (2001) assessed differences in parental stress between unemployed and employed mothers, and analysis of covariance tests showed that employed mothers reported significantly less parental stress than unemployed mothers ($p < .05$). A regression analysis of the group as a whole indicated that being unemployed approached significance as a predictor of greater parental stress ($\beta = -.26$, $p < .10$). Malik and colleagues (2007) however, found no association between employment and parental stress.

Education.

Eight studies assessed the association between parental education and parental stress. All studies found a significant association between parental education and parental stress. Anderson (2008) found a negative correlation between years of education completed and parental stress ($r = -.26$, $p < .01$). Regression analysis showed that less education predicted higher levels of parental stress ($\beta = -.13$, $p < .001$). Rafferty and colleagues (2010) also explored years spent in education, whereby correlation analysis revealed that years in education was negatively associated with maternal distress at time 1 (when children were 14 months old; $r = -.18$, $p < .001$) and at time 2 (when children were three years old; $r = -.18$, $p < .001$). Additional regression analysis showed that higher maternal education predicted lower parental stress (at three years old; $\beta = -.10$, $p < .001$).

In Budd, Holdsworth and HoganBruen's (2006) study, correlation analysis revealed a significant association between educational level and parental stress ($r = -.53$, $p < .001$). Further regression analysis indicated that a higher level of education (e.g. graduating high school) predicted lower levels of parental stress ($\beta = -.49$, $p < .005$). Similarly, Can and Ginsburg-Block (2016) found a negative correlation between education level and parental stress ($r = -0.22$, $p < .05$).

Furthermore, in Combs-Orme and colleagues' (2004) study, regression analysis showed that parent education significantly predicted parental stress on each of the three domains measured by the PSI-SF (Abidin, 1995), namely 'parenting role' ($\beta = -.22$, $p < .05$), 'difficult child' ($\beta = -.30$, $p < .001$), and 'parent-child interaction' ($\beta = -.28$, $p < .01$), where a higher educational level predicted lower parental stress.

In Gyamfi and colleagues' (2001) study, correlation analysis showed a significant negative association between maternal educational level and parental stress, for both employed mothers (r = -.21, p < .05,) and unemployed mothers (r = -.23, p < .05). In regression analysis of both groups, higher maternal education significantly predicted lower levels of parental stress (β = -.32, p < .05*).* In Zhang and colleagues' (2015) study, regression analysis showed that mothers with a high school education (β = -.91, p < .05) and more than a high school education (β = -1.05, p < .05) had less parental stress than mothers with less than a high school education.

Conversely, Malik and colleagues (2007) found a significant *positive* relationship between parental education and the parental distress subscale of the PSI-SF (Abidin, 1995; r = .14, p < .05), indicating that a higher educational level increased parental distress. However, a significant *negative* correlation was found between education and the total stress score (r = -.20, p < .05).

Cumulative risk.

Harden, Denmark, Holmes and Duchene (2014) created a cumulative risk index based on several indicators (household overcrowding, household size, residential instability, relationship status, education status, employment status, receipt of public assistance). Correlation analysis showed that there was a non-significant association between cumulative risk score and parental stress. (r = .11, p > .05).

Discussion

This review aimed to examine the available literature on the association between SES and parental stress in socioeconomically disadvantaged families. The review intended to answer the following two questions: 1) What is the evidence that there is a negative relationship between SES and parental stress in socioeconomically disadvantaged families? 2) What are the most important socioeconomic predictors of parental stress in this population?

Income and economic factors.

Only three out of the six studies that assessed income found a significant negative association with parental stress. The three studies all used sample of mothers with young children (under four years old). Malik and colleagues (2007) and Ryan and colleagues (2009) both found small, significant correlations between income and parental stress. While neither study used a validated measure of parental stress, or indicated a power calculation to determine sample size, Ryan and colleagues recruited a large sample of mothers. Despite recruiting a very small sample of mothers, Raikes and Thompson (2005) used a validated measure of parental stress and used regression analysis to control for potential confounders (e.g. social support). Nevertheless, only a marginally significant, small association was found between income and stress.

There was some evidence from two studies that fathers' economic contributions were negatively associated with maternal stress. However, studies used non-validated measures of parental stress; and Choi and Pyun (2014) found only a marginally significant association. In addition, Coley and Schindler (2008) only found a marginally significant association for mothers who were living with the child's father (and no association for single mothers).

The study that assessed the relationship between poverty (measured by income and number of people in the household) and maternal stress did not report significant findings (Henninger & Luze, 2014). The study was of relative high quality, using a longitudinal design, validated measures and a large sample size. However, no significant associations were found across any of the four time points (over a 10-year period). Only one subscale of the PSI-SF (Abidin, 1995) was used (the parent-child dysfunctional interaction subscale) and the authors suggested that these results were related to the chronic length of time that parents had lived in poverty, thus appearing to minimise its effect on parental stress in this domain (Henninger & Luze, 2014).

On balance, the findings of this review suggest that there is no relationship between income level and parental stress in socioeconomically disadvantaged families. A possible explanation for this finding is that all of the studies reviewed focused on families from low SES backgrounds with small variations in income. In the study by Slack and Yoo (2005) where a non-significant association was

found between income and stress, the range of annual incomes reported by the participants was between $7500 and $9999. Raikes and Thompson (2005) reiterated this point by highlighting that small increases in family income may not be enough to significantly decrease levels of parental stress.

Aside from measuring income or poverty, researchers have highlighted the importance of better understanding the impact of the subjective experience economic hardship or financial vulnerability (Treanor, 2016). Garratt and colleagues (2016) argue that perceived economic position ('income rank') is a more significant determinant of psychological wellbeing than absolute income. Income rank theories have been supported by studies linking economic inequality with poorer mental health outcomes (e.g. Burns, Tomita, & Kapadia, 2014). Whelan and Maitre (2005) define economic vulnerability as being related to economic risk and shock, as well as subjective feelings of insecurity. Often measured by money worries and levels of debt, economic vulnerability has shown to be related to greater levels of psychological distress in previous research (Gershoff, Aber, Raver, & Lennon, 2007). Indeed, in support of prior research, this review found greater support for the positive association between economic hardship and parental stress. Each of the five studies that assessed economic hardship reported significant results in the expected directions. The majority of the studies used a sample of mothers from an ethnic minority background, with children ranging in age from 0-12 years old across the studies. Although none of the studies reported conducting a power calculation, four out of five used large samples of participants. Small, significant positive correlations between economic hardship and parental stress were found by Gyamfi and colleagues (2001), Ryan and colleagues (2009), Slack and Yoo (2005) and Choi and Puyn (2014). Gyamfi and colleagues' (2001) and Zhang and colleagues' (2015) findings were strengthened through regression analysis that controlled for confounding variables. However, none of the studies used a validated measure of parental stress and all used different non-validated measures of economic hardship. As such, one must be cautious when comparing and evaluating these results.

The study by Rafferty and colleagues (2010) used a measure of 'family resources' which included items related to economic hardship (e.g. money to pay bills, childcare and food) as well as other factors (e.g. adequacy of shelter). Lower family resources significantly predicted higher parental stress in mothers. This study was of relative high quality, using a longitudinal design, validated

measures and controlling for confounding data in the analysis. Nevertheless, for the purpose of this review, it is difficult to determine the most important risk factors of parental stress, given the composite measure of 'family resources' used.

Two studies specifically assessed the impact of 'food insecurity' on the wellbeing of families. Food insecurity is defined by the U.S. Department of Agriculture as the limited availability of safe and nutritionally adequate foods or the inability to acquire foods in a socially acceptable way (Bickel, Nord, Price, & Hamilton, 2000). Both Huang and colleagues (2010) and Slack and Yoo (2005) assessed food insecurity in parents with children aged 3-12 years, using a longitudinal design. Huang and colleagues (2010) found a small positive correlation between food insecurity and parental stress. Slack and Yoo (2005) used a much larger sample and found a small positive association for parents with older children (6-12 years), and a medium positive association for parents with younger children (3-5 years). Each study used a different measure of food hardship and parental stress (non-validated), thus the results must be viewed cautiously. Nevertheless, the findings are interesting given the growing trend of families requiring emergency food aid in the UK – reported by Loopstra and colleagues (2015) to be related to government austerity measures and cuts to welfare benefits.

Employment.

Given that employment and occupation are integral components of SES in family research (Conger et al., 2010), it was surprising to find that only two of the reviewed studies considered employment status in their analysis and no studies assessed occupation type. Both Gyamfi and colleagues (2001) and Malik and colleagues (2007) used a small sample of mothers with young children from largely ethnic minority backgrounds (i.e. 100% African American; 41% African American and 33% Hispanic, respectively). Both studies used a cross sectional design and neither used a validated measure of parental stress. Malik and colleagues (2007) did not find an association between employment status (full-time, part-time or unemployed) and parental stress. However, Gyamfi and colleagues (2007) found that being employed was a marginally significant predictor of maternal stress when controlling for confounding variables (e.g. maternal education and age).

Overall, the findings of this review indicate that employment status is not related to parental stress in in socioeconomically disadvantaged families. On the one hand, this finding does not fully support research suggesting that unemployment increases psychological distress in mothers (Belle, 1990). On the other hand, it is perhaps an unsurprising finding given the often poorly paid and insecure nature of the work undertaken by this population – a factor that is unlikely to relieve financial pressure on families (Gyamfi et al., 2001). Nevertheless, this association warrants further investigation by a greater number of studies in order to draw firm conclusions.

Education.

Half of the reviewed studies assessed the relationship between parental education and parental stress, and all reported significant findings. The majority of the studies used a sample of mothers with children under five years old. Anderson (2008) however focused on children aged between 10-18 years old. Sample sizes varied across the studies from very small (Budd et al., 2006; Can & Ginsburg-Block, 2016) to large (Rafferty et al., 2010; Zhang et al., 2015), and three out of eight studies used non-validated measures of parental stress (Gyamfi et al., 2001; Malik et al., 2007; Zhang et al., 2015). In line with expectations, all studies found significant negative associations between parental educational level and parental stress. Correlation analyses revealed small (Anderson, 2008; Can & Ginsburg-Block, 2016; Gyamfi et al., 2001; Malik et al., 2007; Rafferty et al., 2010) medium (Combs-Orme et al., 2004) and strong (Budd et al., 2006) associations. The evidence was strengthened by studies which indicated consistency in the relationship over time (Rafferty et al., 2010), across more than one domain of parental stress (Combs-Orme et al., 2004) and by those which used regression analysis to control for confounding variables (Anderson, 2008; Budd et al., 2006; Combs-Orme et al., 2004; Gyamfi et al., 2001; Rafferty et al., 2010; Zhang et al., 2015).

One surprising finding was that Malik and colleagues (2007) found a small *positive* association between education and the parental distress subscale of the PSI-SF (Abidin, 1995). This contrasted with their finding of a *negative* association with the total stress score. It is thus difficult to draw conclusions from these findings, particularly given that the study used adapted versions of the subscales which are likely to have lacked construct validity. Nevertheless, overall, the studies

reviewed suggest that lower educational status is a significant risk factor for disadvantaged parents. This supports research that has found a negative association between parental educational achievement and general psychological distress in mothers (Barnes, Belsky, Frost, & Melhuish, 2011) and depression in fathers (Nath et al., 2016).

Cumulative risk.

Harden and colleagues (2014) also looked at education and a number of other risk factors for problems in the parenting role (e.g. household overcrowding, receipt of benefits, single parent status), which they combined into a 'cumulative risk score.' The study found a non-significant positive correlation between risk and parental stress. Despite using validated measures, the authors discuss viewing the results with caution due to the small sample size used and the homogenous nature of the group studied (Harden et al., 2014).

Limitations of the Review

Before considering the implications of this review, it is important to acknowledge its limitations. First, it is recognised that the majority of the stages of this review were completed by one researcher. The second researcher (DO) was not able to take part in the screening process or data extraction; therefore, reliability checks of this process cannot be inferred. However, inclusion of the final papers was verified by the second author (CE) against the inclusion and exclusion criteria. In addition, the second research (DO) was able to independently assess the quality of the included studies.

Second, it is important to consider potential publication bias in the papers included. The author excluded non-peer reviewed papers (e.g. dissertations) and qualitative studies. Despite finding several non-significant findings in the papers included, it is possible that further relevant studies were missed.

Furthermore, the review employed stringent criteria regarding the populations that were included. Non-English language and non-Western papers were excluded, as were populations that included parents or children with particular disabilities or conditions. It was felt appropriate to focus

on Western countries due to similarities in recent economic trends (Dorling, 2015). Additionally, parental stress is likely to have differed amongst families with disabilities (Emerson, 2003). Nevertheless, it is acknowledged that families with disabilities are at increased risk of socioeconomic deprivation and thus warrant attention in future research (Emerson, 2003).

It is also important to acknowledge that all of the reviewed studies were American. Most of the studies used a sample of female caregivers with young children, from an ethnic minority background (e.g. African American). This is a considerable limitation of the review and thus, one must be cautious in generalising the findings to other populations, such as socioeconomically deprived families in the UK who are likely to differ on a number of levels (e.g. ethnically and culturally).

Summary, Implications and Conclusion

First, this review considered whether there was a negative relationship between SES and parental stress in socioeconomically disadvantaged families. The studies reviewed present mixed findings, and thus the answer to this question remains inconclusive. However, it is important not to fall into the trap of minimising the impact of socioeconomic structures and systems on families (Katz, 1989). Nor must one stereotype parents by failing to acknowledge the competence and resilience shown by those living in disadvantaged circumstances (Jack, 2000). Nevertheless, the demographically homogenous nature of the populations reviewed is likely to have influenced the non-significant and small associations found between SES and parental stress. Thus, this review does not refute the evidence that low-income parents experience greater parental stress than their middle and high-income counterparts (Belle, 1990; Brooks-Gunn, 1995).

Second, this review explored the most important socioeconomic predictors of parental stress in this population. In analysing the studies which assessed the 'economic' component of SES, there seemed to be a difference in the results according to whether studies used more objective measures (e.g. household income, financial contributions from fathers) or more subjective measures (e.g. perceptions about the ability to pay bills and purchase material necessities). Studies which measured economic hardship by assessing the implication and perception of economic circumstances (e.g.

struggling to 'make ends meet') found a stronger association with parental stress, than studies which assess income or employment status. This finding supports research that has highlighted the importance of one's subjective experience of economic hardship over and above objectively having a low income (Barnett, 2008). Indeed, the family stress model (Conger et al., 1992) proposes that the perception of financial pressure or impact of difficult economic circumstances is the pathway which leads to psychological distress in parents. However, it is also important to bear in mind the possibility that studies which used more subjective measures of economic hardship may have just identified parents who were more stressed and worried in general. Thus, it may be that one's economic circumstances are less important, compared with consideration of subjective experiences of life stressors and the impact of these on parental stress. Further research is needed to more fully explore this idea, and to further assess the specific importance of economic factors on parental stress. Nevertheless, this finding raises questions about the specific psychological impact of the 2008 global financial crisis on families, not least in the UK. Moreover, the review highlighted the potentially important role of food insecurity on parental stress. In the UK, it was estimated that the number of families requiring emergency food aid increased seven-fold between 2011 and 2014 (Loopstra et al., 2015). This finding is therefore relevant given the current economic climate, although one must remain cautious in generalising the findings to populations outside of the USA.

Lower educational achievement appeared to be a relatively consistent predictor of parenting stress in the studies reviewed. This supports research indicating that maternal education is a more important predictor of parenting behaviours than income (Hoff, Laursen, & Tardif, 2002). Moreover, it has been suggested that higher educational achievement may act as a protective factor for families facing financial difficulties (Conger et al., 2010).

Several implications for further research and clinical practice are highlighted by this review. First, the findings reviewed have implications for how SES is measured in research and practice. Measuring income alone may not be enough to understand which families are most vulnerable and in need of support (Gershoff et al., 2007). Economic hardship, food insecurity and educational level are indicated as potentially more accurate predictors of parental stress. While this review did not include British or European research, considering similarities in economic and political trends across the

Western world, the findings remain clinically relevant.

Clinical psychologists have started to recognise the problems associated with the rise of neoliberal policies such as government austerity programmes (Dudley, 2017). Neoliberal ideologies encourage cultures of individualism, competitiveness and societies divided by 'winners and losers' (Pratt, 2006). There has been a call for clinical psychologists to avoid colluding with such politics, by recognising the impact of 'distal' causes of psychological distress, such as those created by economic policies and the media (Smail, 2005). Psychologists have been encouraged to move away from an individualised 'treatment' approach, which could contribute to a 'victim' blaming narrative, or act as a mere 'sticking plaster' to wider problems which lie within the system (Harper, 2016). Clinical psychology has a role in promoting policies which reduce socioeconomic inequality – an approach which is posited to have a more positive impact on mental health on a wider scale (Harper, 2016). For example, Psychologists Against Austerity is a group which campaigns for social justice issues and changes at a systemic level (McGrath et al., 2016). Thus, lobbying and influencing policy at a national and local level is likely to have a beneficial impact on socioeconomically disadvantaged families.

Furthermore, Psychologists are well placed to influence NHS commissioners to consider community-based initiatives, as well as individual therapies (Harper, 2016). Community psychologists promote the practice of a 'bottom up' approach, for example, by working within communities to initiate self-help and peer support networks (Holmes, 2010). The Beacon Project (Stuteley, 2002) is an example of a project where the mental health needs of a community were supported by addressing social needs and fostering social support networks. The work of clinical psychologists in community-based centres (e.g. children's centres) is currently under threat due to cuts to public services (McGrath et al., 2016). This trend further obligates clinical psychologists to take action to oppose such measures which disproportionally affect socioeconomically disadvantaged families (McGrath et al., 2016).

In conclusion, this review has demonstrated that SES is a multifaceted construct that has a more complex relationship with parental stress than might first be assumed. Overall, the evidence on the relationship between SES and parental stress in disadvantaged families was inconclusive. There

was no evidence to indicate that income level or employment status were associated with parental stress in in the population studied. The results suggested that subjective measures of economic hardship may be a more important risk factor for families than objective measures. However, studies used varied and non-validated subjective measures of economic hardship and thus these findings must be taken with caution. There was stronger evidence to suggest that there was a negative association between education attainment and parental stress. However, it is proposed that further, up-to-date British and European research is conducted to more fully understand the relationship between SES and parental stress.

References

Abidin, R. (1983). *Parenting Stress Index: Manual (PSI)*. Charlottesville, Virginia, USA: Pediatric Psychology Press.

Abidin, R. (1995). *Parenting Stress Index: Professional manual* (3rd ed.). Odessa, Florida, USA: Psychological Assessment Resources.

Adler, N., & Ostrove, J. (1999). Socioeconomic status and health: What we know and what we don't. *Socioeconomic Status and Health in Industrial Nations, 896,* 3-15. doi: 10.1111/j.1749-6632.1999.tb08101.x

American Psychological Association Task Force on Socioeconomic Status. (2007). *Report of the APA Task Force on Socioeconomic Status.* Washington, USA: American Psychological Association.

Anderson, L. S. (2008). Predictors of parenting stress in a diverse sample of parents of early adolescents in high-risk communities. *Nursing Research, 57*(5), 340-350. doi: 10.1097/01.NNR.0000313502.92227.87

Barnes, J., Belsky, J., Frost, M., & Melhuish, E. (2011). Neighborhood characteristics and mental health: The relevance for mothers of infants in deprived English neighborhoods. *Social Psychiatry and Psychiatric Epidemiology, 46*(12), 1243-1249. doi: 10.1007/s00127-010-0298-8

Barnett, M. (2008). Economic disadvatnage in complex family systems: Expansion of family stress models. *Clinical and Family Psychology Review, 11*(3), 145-161. doi: 10.1007/s10567-008-0034-z

Belle, D. (1990). Poverty and women's mental health. *American Psychologist, 45*(3), 385-389.

Benner, A. D., & Kim, S. Y. (2010). Understanding Chinese American adolescents' developmental outcomes: Insights from the family stress model. *Journal of Research on Adolescence, 20*(1), 1-12. doi: 10.1111/j.1532-7795.2009.00629.x

Bickel, G., Nord, M., Price, C., Hamilton, W. (2000). *Guide to measuring household food security.* Alexandria, Virginia, USA: Department of Agriculture, Food and Nutrition Service.

Bradley, R. H., & Corwyn, R. F. (2002). Socioeonomic status and child development. *Annual Review of Psychology, 53*(1), 371.

Brooks-Gunn, J. (1995). Strategies for altering the outcomes of poor children and their families. In P.L. Chase-Lansdale & J. Brooks-Gunn (Eds.), *Escape from poverty: What makes a difference for children?* (pp. 87-117). New York, USA: Cambridge University Press.

Browne, J., & Hood, A. (2016). *Living standards, poverty and inequality in the UK: 2015-16 to 2020-21*. London: IFS.

Budd, K. S., Holdsworth, M. J. A., & HoganBruen, K. D. (2006). Antecedents and concomitants of parenting stress in adolescent mothers in foster care. *Child Abuse & Neglect, 30,* 557-574. doi: 10.1016/j.chiabu.2005.11.006

Burns, J. K., Tomita, A., & Kapadia, A. S. (2014). Income inequality and schizophrenia: Increased schizophrenia incidence in countries with high levels of income inequality. *International Journal of Social Psychiatry, 60*(2), 185-196. doi: 10.1177/0020764013481426

Can, D., & Ginsburg-Block, M. (2016). Parenting stress and home-based literacy interactions in low -income preschool families. *Journal of Applied Developmental Psychology, 46,* 51-62. doi: 10.1016/j.appdev.2016.07.002

Child Trends. (1999). *Children and welfare reform: A guide to evaluating the effects of state welfare reform policies.* Washington, D.C., USA: Child Trends.

Choi, J., & Pyun, H. (2014). Nonresident fathers' financial support, informal instrumental support, mothers' parenting, child development in single-mother families with low income. *Journal of Family Issues, 35*(4), 526-546. doi: 10.1177/0192513X13478403

Coley, R. L., & Schindler, H. S. (2008). Biological fathers' contributions to maternal and family functioning. *Parenting: Science & Practice, 8*(4), 294-318. doi: 10.1080/15295190802522814

Combs-Orme, T., Cain, D. S., & Wilson, E. E. (2004). Do maternal concerns at delivery predict parenting stress during infancy? *Child Abuse & Neglect, 28,* 377-392. doi: 10.1016/j.chiabu.2003.09.019

Conger, R. D., Conger, K. J., Elder, G. H., Lorenz, F. O., Simons, R. L., & Whitbeck, L. B. (1992). A family process model of economic hardship and adjustment of early adolescent boys. *Child Development, 63*(3), 526-41. doi: 10.2307/1131344

Conger, R. D., Conger, K. J., & Martin, M. J. (2010). Socioeconomic status, family processes, and individual development. *Journal of Marriage and Family, 72*(3), 685-704. doi: 10.1111/j.1741-3737.2010.00725.x

Cooper, N., & Dumpleton, S. (2013). *Walking the breadline: The scandal of food poverty in 21st century Britain.* Oxford: Oxfam, Church Action on Poverty.

Costello, E. J., Keeler, G. P., & Angold, A. (2001). Poverty, race/ethnicity, and psychiatric disorder: A study of rural children. *American Journal of Public Health, 91*(9), 1494-1498. doi: 10.2105/AJPH.91.9.1494

Crouch, J. L., & Behl, L. E. (2001). Relationships among parental beliefs in corporal punishment, reported stress, and physical child abuse potential. *Child Abuse & Neglect, 25*(3), 413-419. doi: 10.1016/S0145-2134(00)00256-8

De Agostini, P., Hills, J., & Sutherland, H. (2014). *Were we really all in it together? The distributional effects of the 2010-2015 UK Coalition government's tax-benefit policy changes.* London: LSE.

Deater-Deckard, K., Pickering, K., Dunn, J. F., & Golding, J. (1998). Family structure and depressive symptoms in men preceding and following the birth of a child. *The American Journal of Psychiatry, 155*(6), 818-823. doi: 10.1176/ajp.155.6.818

Dorling, D. (2015). The mother of underlying causes - Economic ranking and health inequality. *Social Science & Medicine, 128*, 327-330. doi: 10.1016/j.socscimed.2015.01.008

Dudley, J. (2017). Clinical psychology training in neoliberal times. *Journal of Critical Psychology, Counselling & Psychotherapy, 17*(1), 46-56.

Dunst, C. J., & Leet, H. E. (1987). Measuring the adequecy of resources in household with young children. *Child Care, Health and Development, 13*(2), 111-25. doi: 10.1111/j.1365-2214.1987.tb00528.x

Emerson, E. (2003). Mothers of children and adolescents with intellectual disability: Social and economic situation, mental health status, and the self-assessed social and psychological impact of the child's difficulties. *Journal of Intellectual Disability Research, 47*(4/5), 385-399. doi: 10.1046/j.1365-2788.2003.00498.x

Garratt, E. A., Chandola, T., Purdam, K., & Wood, A. M. (2016). The interactive role of income (material position) and income rank (psychosocial position) in psychological distress: A 9-year longitudinal study of 30,000 UK parents. *Social Psychiatry and Psychiatric Epidemiology, 51*(10), 1361-1372. doi: 10.1007/s00127-016-1255-y

Gershoff, E. T., Aber, L. J., Raver, C. C., & Lennon, M. C. (2007). Income is not enough: Incorporating material hardship into models of income associations with parenting and child development. *Child Development, 78*(1), 70–95. doi: 10.1111/j.1467-8624.2007.00986.x

Gyamfi, P., Brooks-Gunn, J., & Jackson, A. P. (2001). Associations between employment and financial and parental stress in low-income single black mothers. *Women & Health, 32*(1/2), 119-135. doi: 10.1300/J013v32n01_06

Hammen, C. (2005). Stress and depression. *Annual Review of Clinical Psychology, 1,* 293–319. doi: 10.1146/annurev.clinpsy.1.102803.143938

Harden, B., Denmark, N., Holmes, A., & Duchene, M. (2014). Detached parenting and toddler problem behavior in Early Head Start families. *Infant Mental Health Journal, 35*(6), 529-543. doi: 10.1002/imhj.21476

Harper, D. (2016). Beyond individual therapy. *The Psychologist, 29*(6), 440-444.

Henninger, W., & Luze, G. (2014). Poverty, caregiver depression and stress as predictors of children's externalizing behaviours in a low-income sample. *Child & Family Social Work, 19*(4), 467-79. doi: 10.1111/cfs.12046

Hoff, E., Laursen, B., & Tardiff, T. (2002). Socioeconomic status and parenting. In M. H. Borenstein (Ed.), *Handbook of parenting* (pp. 231-52). Mahwah, New Jersey, USA: Lawrence Erlbaum.

Huang, J., Matta Oshima, K. M., & Kim, Y. (2010). Does food insecurity affect parental characteristics and child behavior? Testing mediation effects. *Social Service Review, 84*(3), 381-401. doi: 10.1086/655821

Jack, G. (2000). Ecological influences on parenting and child development. *British Journal of Social Work, 30*(6), 703-20. doi: 10.1093/bjsw/30.6.703

Jiang, Y., Ekono, M., & Skinner, C. (2016). *Basic facts about low-income children: Children under 18 years, 2014.* New York, USA: Columbia University Mailman School of Public Health.

Katz, M. B. (1989). *The undeserving poor: From the war on poverty to the war on welfare*. New York, USA: Pantheon Books.

Katz, I. Corlyon, J., La Placa, V., & Hunter, S. (2007). *The relationship between parenting and poverty.* York: Joseph Rowntree Foundation.

Kiernan, K. E., & Mensah, F. K. (2009). Poverty, maternal depression, family status and children's cognitive and behavioural development in early childhood: A longitudinal study. *Journal of Social Policy, 38,* 569-588. doi: 10.1017/S0047279409003250

Loopstra, R., Reeves, A., Taylor-Robinson, D., Barr, B., McKee, M., & Stickler, D. (2015). Austerity, sanctions and the rise of food banks in the UK. *BMJ, 350,* 1-6. doi: 10.1136/bmj.h1775

Lyons-Ruth, K., Easterbrooks, M. A., & Cibelli, C. D. (1997). Infant attachment strategies, infant mental lag, and maternal depressive symptoms: Predictors of internalizing and externalizing problems at age 7. *Developmental Psychology, 33*(4), 681-692. doi: 10.1037/0012-1649.33.4.681

Malik, N. M., Boris, N. W., Heller, S. S., Harden, B. J., Squires, J., Chazan-Cohen, R., & … Kaczynski, K. J. (2007). Risk for maternal depression and child aggression in Early Head Start families: A test of ecological models. *Infant Mental Health Journal, 28*(2), 171-191. doi: 10.1002/imhj.20128

McGrath, L., Griffin, V., & Mundy, E. (2016). The psychological impact of austerity: a briefing paper by Psychologists Against Austerity. *Mental Health Nursing, 36*(1), 12-17.

McLoyd, V. C. (1998). Socioeconomic disadvantage and child development. *The American Psychologist, 53*(2), 185-204.

Moher, D., Liberati, A., Tetzlaff, J., & Altman, D. G. (2009). Preferred reporting items for systematic reviews and meta-analyses: The PRISMA statement. *Annals of Internal Medicine, 151*(4), 264-269. doi: 10.7326/0003-4819-151-4-200908180-00135

Nath, S., Psychogiou, L., Kuyken, W., Ford, T., Ryan, E., & Russell, G. (2016). The prevalence of depressive symptoms among fathers and associated risk factors during the first seven years of their child's life: Findings from the Millennium Cohort Study. *BMC Public Health, 16*(1), 509-522. doi: 10.1186/s12889-016-3168-9

Newland, R., Crnic, K., Cox., & Mills-Koonce, W. (2013). The family model stress and maternal psychological symptoms: Mediated pathways from economic hardship to parenting. *Journal of Family Psychology, 27*(1), 96-105. doi: 10.1037/a0031112

Parke, R. D., Coltrane, S., Duffy, S., Buriel, R., Dennis, J., Powers, J., & … Widaman, K. F. (2004). Economic stress, parenting, and child adjustment in Mexican American and European American families. *Child Development, 75*(6), 1632-56. doi: 10.1111/j.1467-8624.2004.00807.x

Paul, N., Wang, L., Stanton, S., Greeson, J., & Smoski, M. (2013). Psychological and neural mechanisms of trait mindfulness in reducing depression vulnerability. *Social Cognitive and Affective Neuroscience, 8*, 56-64. doi:10.1093/scan/nss070

Pickett, K. E., & Wilkinson, R. G. (2015). Income inequality and health: A causal review. *Social Science and Medicine, 128,* 316-26. doi: 10.1016/j.socscimed.2014.12.031

Pratt, A. (2006). Neoliberalism and social policy. In M. Lavalette & A. Pratt (Eds.), *Social policy, concepts and issues* (pp. 9-25). London: Sage Publications.

Rafferty, Y., Griffin, K. W., & Robokos, D. (2010). Maternal depression and parental distress among families in the Early Head Start Research and Evaluation Project: Risk factors within the family setting. *Infant Mental Health Journal, 31*(5), 543-569. doi: 10.1002/imhj.20271

Raikes, H. A., & Thompson, R. A. (2005). Efficacy and social support as predictors of parenting stress among families in poverty. *Infant Mental Health Journal, 26*(3), 177-190. doi: 10.1002/imhj.20044

Ryan, R. M., Tolani, N., & Brooks-Gunn, J. (2009). Relationship trajectories, parenting stress, and unwed mothers' transition to a new baby. *Parenting: Science and Practice, 9*(1-2), 160-177. doi: 10.1080/15295190802656844

Slack, K., & Yoo, J. (2005). Food hardship and child behavior problems among low-income children. *Social Service Review, 79*(3), 511-36. doi: 1086/430894

Smail, D. (2005). *Power, interest and psychology: Elements of a social materialist understanding of distress.* Ross-on-Wye: PCCS Books.

Spence, R., Roberts, A., Ariti, C., Bardsley, M. (2014). *Focus on: Antidepressant prescribing. Trends in the prescribing of antidepressants in primary care.* London: Quality Watch.

Stuteley, H. (2002). The Beacon Project – A community-based health improvement project. *British Journal of General Practice, 52,* 44-45.

Tinson, A., Ayrton, C., Barker, K., Barry Born, T., Aldridge, H., & Kenway, P. (2016). *Monitoring poverty and social exclusion (MPSE).* York: Joseph Rowntree Foundation.

Treanor, M. (2016). The effects of financial vulnerability and mothers' emotional distress on child social, emotional and behavioural well-being: A structural equation model. *Sociology, 50*(4), 673-694. doi: 10.1177/0038038515570144

Whelan, C., & Maitre, B. (2005). Vulnerability and multiple deprivation perspectives on economic exclusion in Europe: A latent class analysis. *European Societies, 7*(3), 423-50. doi: 10.1080/14616690500194050

Williams, J. W., Plassman, B. L., Burke, J., Holsinger, T., & Benjamin, S. (2010). *Preventing Alzheimer's disease and cognitive decline. Evidence report/technology assessment No. 193. (Prepared by the duke evidence-based practice center under contract No. HHSA 290-2007 -10066-I.).* Rockville, Maryland, USA: Agency for Healthcare Research and Quality.

Zhang, S., Eamon, M. K., & Zhan, M. (2015). Neighborhood disorder, perceptions of neighborhood social capital, and maternal stress: Exploration of a mediating mechanism. *Journal of Community Psychology, 43*(3), 278. doi: 10.1002/jcop.21678

Chapter Two: Empirical Paper

Exploring socioeconomic and psychological factors associated with stress and difficulties in families [1]

[1] Article prepared for submission to *Parenting: Science and Practice* for peer review. Please see Appendix D for a copy of the journal guidelines for authors.

Abstract

This study aimed to explore the impact of socioeconomic factors on parental stress and psychological difficulties in British families. Additionally, the study assessed the potentially protective role of trait mindfulness in the relationship between socioeconomic status (SES) and family difficulties. The study used a cross sectional design and 132 parents completed an online or paper-based survey measuring parental stress (Parental Stress Scale), depression (Patient Health Questionnaire-9), anxiety (Generalised Anxiety Disorder Assessment-7), child behavioural problems (Strengths and Difficulties Questionnaire) and trait mindfulness (Five Facet Mindfulness Questionnaire-Short Form). Parents with children aged 3-11 years old were recruited from two nurseries and four children's centres in Liverpool, UK. Correlation analysis indicated inconclusive evidence for the relationship between SES and family difficulties in the population studied. A moderation analysis revealed a non-significant interaction effect between trait mindfulness and SES in the models tested. Thus, hierarchical regression analyses were performed and found that lower trait mindfulness was a strong predictor of parental psychological difficulties. SES did not significantly predict psychological problems in parents, however, lower SES predicted greater child behavioural problems. Parent and child disability status significantly predicted family difficulties. The findings indicate that mindfulness interventions may be helpful for families experiencing difficulties from a diverse range of backgrounds. However, further research is needed to more fully understand the role of trait mindfulness and other potential protective factors for socioeconomically disadvantaged families in the UK.

Key words: Socioeconomic status, socioeconomic disadvantage, parental stress, psychological difficulties, trait mindfulness, families.

Introduction

Socioeconomic Disadvantage, Mental Health and Parenting

In the UK, the period before the economic recession in 2008 was characterised by an increase in unmanageable household debt and house repossessions (Coope et al., 2014). Trends in rising unemployment, increased job insecurity and a reduction in wages followed (Coope et al., 2014). Economic recessions have been linked to adverse mental health problems and evidence suggests an association between economic downturn and increased suicide rates (e.g. Chang, Stuckler, Yip, & Gunnell, 2013; Reeves et al., 2012). Nevertheless, research has indicated that the adverse effects of periods of economic decline are buffered by sufficient spending on social security measures and support for the unemployed (Stuckler, Basu, Suhrcke, Coutts, & McKee, 2009). On the contrary, the British government introduced significant reforms to the welfare system and cuts to public spending following the most recent recession (De Agostini, Hills, & Sutherland, 2014). Evidence has started to emerge to document trends since the 'age of austerity,' such as an increase in self-reported mental health problems, particularly amongst socioeconomically disadvantaged groups (Barr, Kinderman, & Whitehead, 2015). Furthermore, austerity measures have led to a rise in food poverty (Cooper & Dumpleton, 2013), and cuts to children's centres have disproportionally affected disadvantaged families (Torjesen, 2016). The number of children living in poverty in the UK has been predicted to rise by 800,000 by 2020 (Brewer, Browne, & Joyce, 2011). A recent British study demonstrated that the transition into poverty significantly increased the risk of psychological problems in mothers and behavioural problems in children (Wickham, Whitehead, Taylor-Robinson, & Barr, 2017).

The family stress model (Conger et al., 1992) describes the negative impact of economic hardship on parental psychological distress, parenting practices and child outcomes. Evidence suggests a positive relationship between economic hardship, parental psychological distress (e.g. depression and anxiety) and harsh and inconsistent parenting (Barnett, 2008). Less attention has been paid to the specific impact of economic difficulty on 'parental stress.' Parental stress refers to the psychological distress arising specifically from demands within the parenting role (Deater-Deckard, Pickering, Dunn, & Golding, 1998). A review of the literature indicated a positive association

between perceived economic hardship and parental stress (e.g. Choi & Puyn, 2014; Slack & Yoo, 2005). The relationship between low income and parental stress was less clear. Some studies did not find an association (e.g. Anderson, 2008; Slack & Yoo, 2005), while others found that lower income households were more vulnerable to parental stress (e.g. Malik et al., 2007; Raikes & Thompson, 2005). Some authors have highlighted the importance of considering parents' subjective experience of economic hardship, over and above their income bracket (e.g. Conger & Donellan, 2007; Mistry, Biesanz, Taylor, Burchinal, & Cox, 2004). Nevertheless, in family research, socioeconomic status (SES) is often used as an indicator of economic hardship, and parental income, educational level and occupational status are the usual components considered (Barnett, 2008). However, it is generally agreed that SES and poverty status are conceptually different (McLoyd, 1998). SES is considered to be less changeable than poverty status, and thus a more stable risk or protective marker (McLoyd, 1998). SES is arguably more reflective of a family's resources because factors such as educational level indicate potential for earnings and provision of additional resources for children (Barnett, 2008). Maternal educational status, for example, has been shown to be a strong predictor of parenting practices (Hoff, Laursen, & Tardif, 2002). Indeed, some studies have indicated that parental educational level is a stronger predictor of parental stress than household income (e.g. Anderson, 2008; Combs-Orme, Cain, & Wilson, 2004).

Evidence suggests that parents from lower SES backgrounds are more likely to use harsh discipline and authoritative parenting styles with their children (e.g. Jansen et al., 2012; Rafferty & Griffin, 2010). On the contrary, positive child outcomes are associated with less harsh discipline and warmer and more nurturing parenting styles (Hoff et al., 2002). Children in socioeconomically disadvantaged families are at greater risk of developing behavioural problems (Bloomquist & Schnell, 2002). In addition, socioeconomically disadvantaged children are more likely to reside within single-parent families, teenage-parent families (Kemp, Bradshaw, Dornan, Finch, & Mayhew, 2004), and families with parents who have physical or mental health problems (Katz, Corlyon, La Placa, & Hunter, 2007).

Research has indicated that parent training programmes are the most efficacious interventions

for behavioural problems in children (Hutchings et al., 2007). The most strongly evidenced parent training interventions use a behavioural model for children with conduct problems aged three to 11 years (National Institute for Health and Clinical Excellence [NICE], 2013). However, children from socioeconomically disadvantaged families are less likely to benefit (Reyno & McGrath, 2006), despite the increased risk of behavioural difficulties (Bloomquist & Schnell, 2002). Some authors have argued that parent training programmes which target emotional regulation in parents are more useful because they enable parents to become more emotionally available to their children (Harnett & Dawe, 2012). Emerging evidence suggests that mindfulness-based interventions may benefit socioeconomically disadvantaged parents who are at greater risk of emotionally reactive parenting due to environmental stressors (Eames, Crane, Gold, & Pratt, 2015).

Identifying Protective Factors

It is important to identify protective factors in family research because they may serve as buffers against adversity (Lamis, Wilson, Tarantino, Lansford, & Kaslow, 2014). Identifying factors that may protect against risk factors is a key step in developing appropriate interventions for at-risk groups (Jones, Hastings, Totsika, Keane, & Rhule, 2014). As well as socioeconomic disadvantage, several other risk factors for parental stress have been identified such as poor maternal mental health (e.g. depression; Leigh & Milgrom, 2008), child disability status and behavioural problems (Emerson, 2003), and negative child-parent interactions (McPherson, Lewis, Lynn, Haskett, & Behrend, 2009). Significant protective factors that have been identified include maternal self-efficacy and self-esteem (Raikes & Thompson, 2005), social support (Saisto, Salmela-Aro, Nurmi, & Halmesmaki, 2008) and 'spiritual wellbeing' (Lamis et al., 2014).

Mindfulness

Mindfulness is a practice that can be defined as "paying attention in a particular way: on purpose, in the present moment, non-judgementally" (Kabat-Zinn, 1994, p. 4). This process applies to internal experiences (e.g. thoughts, feelings, sensations and urges) and external stimuli (e.g. scents, sights and sounds; Baer, 2014). Mindfulness-based interventions have demonstrated efficacy for a range of psychological difficulties (e.g. anxiety and depression) in clinical and non-clinical populations (Baer, 2014). Research has suggested that several psychological mechanisms are involved in the improvement of

psychological wellbeing following mindfulness-based interventions. For example, a meta-analysis of mediation studies by Gu, Strauss, Bond and Cavanagh (2015) found that improvements in cognitive and emotional reactivity was the strongest and most consistent mediating factor. There was also moderate evidence to suggest that improvements in repetitive negative thinking were important mechanisms.

Kabat-Zinn (2003) considers mindfulness to be an inherent human capacity that can be strengthened through training. Researchers have used the term 'trait mindfulness' to describe an individual's 'baseline' level of mindfulness before training (Shapiro, Warren Brown, Thoresen, & Plante, 2011). Shapiro and colleagues (2011) found that individuals with higher levels of pre-treatment trait mindfulness had better outcomes following a mindfulness based stress reduction (MBSR) course. However, participants with lower levels of pre-treatment trait mindfulness also had significantly better outcomes compared with a control group. Further evidence has suggested that higher levels of trait mindfulness are related to lower levels of anxiety, depression and emotion dysregulation, as well as improved life satisfaction (Keng, Smoski, & Robins, 2011). A study by Paul, Stanton, Greeson, Smoski and Wang (2012) found that trait mindfulness was protective against depression through the mechanism of high 'non-reactivity to inner experience' (i.e. the ability to better inhibit behavioural responses to negative emotions). Additionally, studies have identified trait mindfulness as a protective factor against levels of distress experienced by parents of children with autism (Conner & White, 2014; Jones et al., 2014). Jones and colleagues (2014) highlighted the potential benefits of mindfulness-based parent training interventions with this population.

Dumas (2005) suggested that promoting mindfulness in parents could improve the effectiveness of parent training programmes through a mechanism of reducing negative, automatic 'emotionally reactive' patterns of responding to child behaviours. Indeed, parent training interventions that have incorporated mindfulness have seen improvements in the emotional reactions of parents to child behaviours (Coatsworth, Duncan, Greenberg, & Nix, 2010). Eames and colleagues (2015) indicated the particular relevance of mindfulness-based interventions for parents from socioeconomically disadvantaged backgrounds. A pilot study looking at the effects of a mindfulness-based intervention with disadvantaged parents found clinically significant improvements on measures of parental stress and depression post-

intervention. However, it is suggested that more research is needed to support the use of mindfulness with this population (Eames et al., 2015).

Aims, Rationale and Hypotheses

In summary, evidence has highlighted the lower success rates of parent training interventions with socioeconomically disadvantaged families (Reyno & McGrath, 2006) despite increased risk factors such as parental psychological distress and child behavioural problems (Conger et al., 1992). It is suggested that there is a need for more research to inform appropriate interventions for this population. Therefore, this study aims to explore whether trait mindfulness is a moderator in the relationship between SES and parental stress, depression, anxiety and child behavioural problems. A moderator affects the strength of the relationship between a risk factor and an outcome (Rose, Holmbeck, Coakley, & Franks, 2004). Previous research has identified trait mindfulness as a protective factor for psychological distress in parents of children with autism (Jones et al., 2014). In this study, identifying trait mindfulness as a moderator would provide greater support for the use of mindfulness interventions with socioeconomically disadvantaged families. Trait mindfulness is conceptualised as a moderator because there is no evidence to the author's knowledge to suggest that trait mindfulness is associated with SES, and thus it cannot be considered as an explanatory variable. The study will assess whether the hypothesised relationships are changed or weakened when trait mindfulness is considered. It is hypothesised that:

1) There will be a negative association between SES and parental stress, depression, anxiety and parent reported child behavioural problems.
2) There will be a negative association between trait mindfulness and parental stress, depression, anxiety and parent reported child behavioural problems.
3) Trait mindfulness will moderate the relationship between SES and parental stress, depression, anxiety and parent reported child behavioural problems.

Method

Participants

One hundred and thirty-two parents completed the study between August and November 2016. Participants were eligible to complete the survey if they were: 1) aged 16 years old or older; 2) a parent or caregiver to a child aged between three and 11 years old; and 3) able to read and understand English. Of the sample studied, 82.6% of participants completed an online version of the survey, and 17.4% completed a paper version. The mean age of participants was 35.2 years (SD 6.1, range 24-56 years). The mean number of children that participants had was two (SD 0.9, range 1-6). Further information about study participants is provided in Table 1 and Table 2.

Table 1

Demographic Information of Study Participants (N = 132)

Variable	%
Gender	
Female	90
Male	9
Other	1
Ethnicity	
White	85.6
Asian	4.5
Black	3.0
Mixed	4.5
Arab	2.4
Religion	
Christian	57.6
Muslim	9.1
Non-religious	29.5
Other	1.5
Not disclosed	2.3
Relationship status	
Single	15.1
Married	65.2
Cohabiting	14.4
Divorced or separated	5.3

Educational qualifications	
No qualifications	0.8
High school level	36.2
University level	50.8
Post-graduate level	12.2
Employment status	
Paid employment	69.7
Student	3.0
Voluntary employment	0.8
Homemaker	19.7
Unemployed	6.8
Annual income (£)	
Less than 10,399	10.6
10,400 – 15,599	11.4
15,600 – 25,999	18.2
26,000 – 36,399	22.0
36,400 – 51,999	17.4
Over 52,000	20.4
Main source of income	
Wages	81.1
Benefits or child maintenance payments	18.9
Housing status	
Home owner	62.0
Renting privately	20.5
Renting from council	16.7
Not disclosed	0.8
Physical or mental health difficulty (current)	12.9
Previously attended parent training course	19.7
Previously attended mindfulness training	12.9

Table 2

Demographic Information of Participants' Children

Variable	%
Child age	
3-5 years	57.7
6-8 years	27.1
9-11 years	15.2

Child gender	
Male	51.7
Female	48.3
Child with disability or condition	15.2
Relationship to child	
Biological parent	98
Adoptive parent	1
Parent's partner	1

Measures

Parental Stress Scale.

The Parental Stress Scale (PSS; Berry & Jones, 1995) is an 18-item questionnaire measuring positive and negative elements of parenthood (e.g. emotional benefits, demands on resources, opportunity restrictions) on a five-point Likert scale. Total scores can range between 18 and 90, where higher scores represent greater parental stress. Good internal consistency was reported by Berry and Jones (1995; Cronbach's α=.84), and was maintained in the present study (Cronbach's α=.87).

Patient Health Questionnaire-9.

The Patient Health Questionnaire-9 (PHQ-9; Kroenke, Spitzer, & Williams, 2001) is a nine-item questionnaire which measures depression (e.g. items related to loss of pleasure, low mood and poor concentration). The questionnaire uses a four-point Likert scale and total scores range from zero to 27 (where higher scores indicate greater problems). Good internal consistency was reported by Pinto-Meza, Serrano-Blanco, Peñarrubia, Blanco and Haro (2005; Cronbach's α=.86), and was maintained in the present study (Cronbach's α=.90).

Generalised Anxiety Disorder Assessment-7.

The Generalised Anxiety Disorder Assessment-7 (GAD-7; Spitzer, Kroenke, Williams, & Lowe, 2006) is a seven-item questionnaire measuring anxiety problems (e.g. difficulty relaxing) on a four-point Likert scale. Total scores can range from zero to 21, where higher scores represent greater

anxiety. Good internal consistency was reported by Beard and Bjorgvinsson (2014; Cronbach's α=.88), and was maintained in the present study (Cronbach's α=.93).

Strengths and Difficulties Questionnaire.

The Strengths and Difficulties Questionnaire for parents or educators (SDQ; Goodman, 1997) is a 25-item questionnaire that measures positive and negative attributes of children across five subscales. This study used the 'conduct problems' subscale from the SDQ only, which contains five items. The researcher decided to use the version of the questionnaire for parents of 4-17 year olds (and not the version for 2-4 year olds) to more accurately assess difficulties across a broader age range. Parents rated the child that they considered to have more behavioural problems if they had more than one child in the specified age range (3-11 years). The conduct problems subscale measures behavioural difficulties on a three-point Likert scale. Scores can range from zero to 10, where higher scores represent greater behavioural difficulties. Internal consistency of this subscale was reported to be .63 by Goodman (2001), which was a similar finding in the present study (Cronbach's α=.61). In addition, the mean inter-item correlation for this scale was .24 which is within the acceptable range of .15 to .50 recommended by Briggs and Cheek (1986).

Five Facet Mindfulness Questionnaire - Short Form.

The Five Facet Mindfulness Questionnaire - Short Form (FFMQ-SF; Bohlmeijer, ten Klooster, Fledderus, Veehof, & Baer, 2011) is a 24 item self-report questionnaire which measures trait mindfulness on five subscales (observing, describing, acting with awareness, non-judging of inner experience and non-reactivity of inner experience). The questionnaire uses a five-point Likert scale and total scores can range from 24 to 120, where a higher score indicates greater mindfulness. Internal consistency coefficients have been found to be acceptable by Bohlmeijer and colleagues (2011), ranging from .75 (non-reactivity of inner experience) to .87 (describing). Similarly, the present study found acceptable coefficients across the subscales (observing = .76; describing = .77; acting with awareness = .84; non-judging = .72; non-reactivity = .74).

The individual subscales of the FFMQ-SF are usually examined independently. However, it is

acknowledged in research that each of the individual subscales of the measure can be combined to create a 'global mindfulness' score (Williams, Dalgleish, Karl, & Kuyken, 2014). Studies that have used the total score in their analyses include those by Carmody and Bear (2008) and Gard and colleagues (2012). Additionally, research by Williams and colleagues (2014) has highlighted that for a community sample that do not practice meditation, the measure should be considered a 'four factor' model (not a 'five'), as the 'observe' component of the measure did not load significantly onto the overarching mindfulness factor, in comparison to the other four components. It has been suggested that the 'observing' component of mindfulness has a different meaning to non-meditators, and is less relevant to their wellbeing (Williams et al., 2014; Gu et al., 2016). Indeed, this study found that there were weak or non-significant correlations between the 'observe' factor of the measure and the other four factors. In contrast, the other four factors were more strongly related to each other (see Appendix E). For the purpose of conducting the moderation analysis, this study created a global mindfulness score. Based on recommendations from the research reviewed (e.g. Williams et al., 2014), the 'observe' subscale was excluded from the total mindfulness score. The study found acceptable internal consistency for the summed scale created (Cronbach's α=.86).

Demographic information and SES.

Several demographic items were included in the survey such as participant gender, age, ethnicity, religion, relationship status, housing status, and disability status (see Appendix F). In addition, participants were asked to provide information about their children (e.g. age, gender, disability status). To measure SES participants were asked to provide information about their employment status, annual household income and educational level. In addition, participants were asked to indicate the main source of their income (e.g. benefits or wages). Research indicates that income, education and employment are the main factors to consider when measuring SES (Barnett, 2008; Conger, Conger, & Martin, 2010). However, preliminary analysis of the data indicated that annual household income was not associated with any of the key dependent variables. As such, it was decided not to include this measure in subsequent analysis. Alternatively, employment, educational level and 'income source' were used to create an SES composite score. To aid the analysis,

participants' educational status was recoded and divided into three levels (1 = high school or below, 2 = university level, 3 = post-graduate level). Employment status was divided into two levels (1 = no employment/unpaid employment, 2 = paid employment). Income source was divided into two levels (1 = benefits, 2 = wages). A total score was created by summing these scores. Scores could range from 3 to 7, where a higher score was considered to represent a higher level of SES.

Design, Sample Size and Ethics

This study used a cross sectional design using both paper-based and online survey methods. Before conducting the study, a power calculation was performed using G*Power 3 (Faul, Erdfelder, Buchner, & Lang, 2009) to determine an appropriate sample size for moderation analysis based on 12 predictors (see Appendix G). A sample of 127 participants was indicated in order to reach .80 power to detect a medium effect (f^2 = .15), as recommended by Cohen (1977). Before the study was submitted for ethical review, the researcher consulted two parents at a local children's centre on the research design and materials. Following this meeting, certain changes were made to the original design of the study (e.g. inclusion of an online version of the survey, and more information on mindfulness in the study debrief). Ethical approval was received from the University of Liverpool ethics committee in June 2016 (RETH001031, see Appendix I).

Procedure

To identify relevant recruitment sites, the online tool www.checkmyarea.com was used to identify children's centres and nurseries in areas with ranging levels of affluence compared to other parts of the UK. Four children's centres and two nurseries in the Liverpool area agreed to take part, and batches of paper-based surveys were distributed to each site. Posters were put up at each site to advertise the study. Participants were given the option to complete the survey at the centre or at home (or online), and completed paper-based surveys were returned to the staff at the centres or posted back to the researcher. An online version of the survey was created using the Qualtrics software tool (2016), and the study was advertised on the Facebook pages of each recruitment site.

Participants were invited to read an information sheet before completing the study and they

were required to indicate informed consent to take part. Following completion of the questionnaires, participants were provided with a debrief about the study which included signposting to relevant agencies (e.g. helplines and support organisations). Participants were offered the opportunity to leave their contact details to receive a £5 Tesco voucher and/or to receive a summary of the final report. Upon receipt of completed surveys, participants' contact details were separated from their questionnaire data to ensure anonymity. See Appendix F and Appendix J for the full details of materials used in the study.

Data analysis procedure.

Data preparation.

All data was analysed using the statistical analysis tool, SPSS (version 24; IBM, 2016). Initially, the data was screened for errors and incomplete datasets. Participants were excluded from the analysis if they had not completed all of the measures of the survey. This was in line with ethical stipulations to exclude participants who chose to stop completing the questionnaire before submission as an indicator of withdrawal of consent. Further details of participant completion are provided in Figure 1. The remaining participants (N = 132) had completed all of the measures and were thus included in the analysis. Item-mean substitution was used in cases where participants had missed 10% or less of items in one measure.

The dataset was further prepared by re-coding reverse-scored items for the relevant measures. Total scores were calculated for the PSS, PHQ-9, GAD-7, FFMQ-SF and the conduct subscale of the SDQ, as outlined above. An SES composite score was created by re-coding and summing scores from the employment, education and 'income source' variables, as previously described.

Testing assumptions.

Prior to undertaking the main analyses, key assumptions were tested in line with recommendations by Field (2013) and Pallant (2016). Normality assumptions were tested by examining the output from Kolmogorov-Smirnov tests, and visual assessment of histograms and Q-Q plots. Normality assumptions were violated for the PHQ-9 scale, the GAD-7 scale, and the conduct

problems subscale of the SDQ. As transformation of the variables did not change the distribution of the GAD-7 or the SDQ, non-parametric Spearman's correlations were performed in the analysis.

Prior to undertaking moderation and regression analyses, investigation of residual plots indicated no evidence of homoscedasticity or violations of normality. In addition, there was no evidence of multicollinearity through inspection of correlations, tolerance and variance inflation factor values. Finally, Cook's distance values indicated that there were no outliers that significantly affected the models.

Methods of analysis.

Initially, descriptive statistics were generated to summarise the data (see Table 3). Before testing hypotheses one and two, preliminary correlation analyses were performed to explore the confounding effects of key demographic variables. Significant confounders were included as covariates in subsequent moderation and regression analyses.

To examine hypothesis one, indicators of SES (income, income source, education and employment) were correlated separately with the dependent variables. Second, the SES composite score was correlated with the dependent variables. Hypothesis two was tested by correlating the total mindfulness score with the dependent variables; hypothesis three was tested by performing a moderation analysis using the PROCESS macro (model one) for SPSS (Hayes, 2012). Due to a non-significant interaction effect in all of the moderation models tested, the interaction terms were dropped and hierarchical multiple regression analyses were performed. This was in line with recommendations by Wuensch (2016) when the interaction effect between two independent variables is non-significant in moderation analysis.

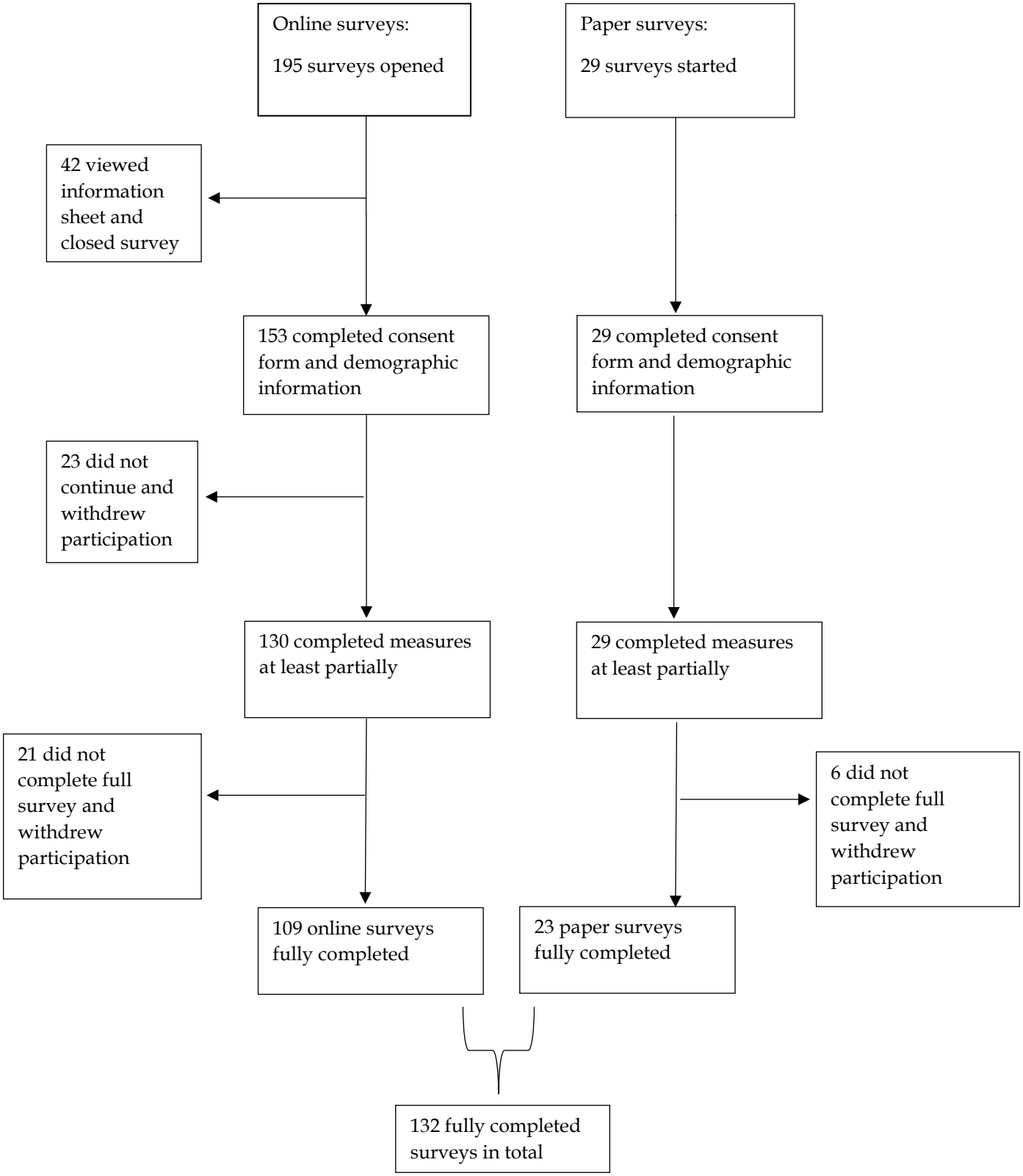


Figure 1. Flow chart of participant completion.

Results

Descriptive Statistics

The descriptive statistics for each of the measures are presented in Table 3. The mean scores for the parental stress, depression, anxiety and child conduct problems measures were higher than scores reported by other studies using non-clinical samples. No comparative norm was available for the global mindfulness score used. However, when assessing the individual subscales of the FFMQ-SF, the mean scores were comparable to scores reported by Newcombe and Weaver (2016) who used a community sample of adult women.

Table 3

Mean, Standard Deviation, Score Range and Comparative Mean for Study Variables

Measure	Mean	SD	Range	Comparative Mean	Comparative SD
PSS	41.7	9.9	20-70	37.1[1]	8.1[1]
PHQ-9	7.8	6.3	0-27	3.3[2]	3.8[2]
GAD-7	6.4	5.5	0-21	3.0[3]	3.4[3]
SDQ - Conduct Problems	2.4	1.8	0-9	1.6[4]	1.7[4]
FFMQ-SF total	63.6	10.2	40-95	-	-
Observing	13.0	3.2	5-20	14.5[5]	2.6[5]
Describing	18.4	3.2	12-25	17.3[5]	4.2[5]
Acting with awareness	14.9	4.0	5-25	16.7[5]	4.0[5]
Non-judging	15.0	3.6	6-25	14.9[5]	4.4[5]
Non-reactivity	15.3	3.3	6-24	14.3[5]	3.6[5]

Note. FFMQ-SF total excludes the observe subscale. [1]Berry & Jones, 1995; [2] Kroenke et al., 2001; [3]Löwe et al, 2008; [4]Meltzer et al., 2000; [5]Newcombe & Weaver, 2016.

Correlation Analysis

Confounding variables.

The confounding effects of several key demographic variables were examined using correlation coefficients. The majority of the demographic variables assessed (i.e. parent age, gender, relationship status, housing status, number of children, attendance of parenting or mindfulness courses) were not significantly related to reported levels of parental stress, depression, anxiety or child behavioural problems. However, having a child with a disability or condition was associated with higher parental stress ($r_{pb} = .186$, $p < .05$), depression ($r_{pb} = .211$, $p < .05$), anxiety ($r_{pb} = .193$, $p < .05$) and child behavioural problems ($r_{pb} = .249$, $p < .01$), compared with having a child without a disability. Furthermore, parents who reported having a disability or condition themselves were more likely to score higher on depression ($r_{pb} = .435$, $p < .01$), anxiety ($r_{pb} = .399$, $p < .01$) and child behavioural problems ($r_{pb} = .191$, $p < .01$), compared to parents without a disability. As such, child disability and parent disability status were included as covariates in subsequent analyses.

Associations between SES and family difficulties.

Hypothesis one predicted a negative relationship between SES and parental stress, depression, anxiety and child behavioural problems. Correlation coefficients between the examined variables are presented in Table 4 and Table 5.

Parental stress.

There were no significant relationships between any of the indicators of SES assessed (i.e. income, income source, education, employment) and parental stress. There was also a non-significant association between the SES composite score and parental stress.

Depression.

The results indicated no significant association between income and depression in parents. However, significant negative associations were found on all other indicators of SES. Negative associations were found between parental educational level and depression ($r = -.174$, $p < .05$), and

employment status and depression (r_{pb} = .178, p < .05). Parents whose income was sourced from 'wages' were likely to score lower on depression compared with parents whose income was mostly sourced from welfare payments (r_{pb} = .234, p < .01). When assessing SES as a whole (using the composite score), a negative association between SES and depression was indicated (r = -.260, p < .01).

Anxiety.

There were no significant relationships found between income, education or employment status and anxiety in parents. However, a significant association was found between income source and anxiety, where parents receiving wages reported less anxiety than parents relying on welfare (r_{pb} = -.209, p < .05). In addition, there was a significant negative relationship between the SES composite score and anxiety (r = -.196, p < .05).

Child behavioural problems.

The results did not indicate significant relationships between income or employment status and child behavioural problems, however, a significant negative association was observed between parental educational level and behavioural problems (r = -.177, p < .05). In addition, parents receiving wages reported fewer child behavioural problems than parents relying on welfare (r_{pb} = -.191, p < .05). There was a significant negative association between the SES composite score and behavioural problems (r = -.229, p < .01).

In summary, the results indicated no association between SES and parental stress. There was some evidence to suggest that there was a negative association between SES and depression, anxiety and child behavioural problems. As such, hypothesis one is only partially supported.

Associations between trait mindfulness and family difficulties.

Hypothesis two predicted a negative relationship between trait mindfulness and the dependent variables. Indeed, significant negative relationships were found between trait mindfulness and parental stress (r = -.419, p < .01), depression (r = -.574, p < .01), anxiety (r = -.581, p < .01) and child behavioural problems (r = -.247, p < .01). Hypotheses two is therefore supported.

Table 4

Spearman's Correlations

Variable	Parental Stress	Depression	Anxiety	Conduct Problems	Trait Mindfulness	Annual Income	Education Level	SES
Parental Stress	1	.503**	.482**	.478**	-.419**	.003	.027	-.099
Depression		1	.871**	.367**	-.574**	-.116	-.174*	-.260**
Anxiety			1	.354**	-.581**	-.096	-.115	-.196*
Conduct Problems				1	-.247**	-.153	-.177*	-.229**
Trait Mindfulness					1	.143	.241**	.158
Annual Income						1	.448**	.647**
Education Level							1	.762**
SES								1

Note. SES composite combines education, income source and employment.

*p <.05; **p <.01

Table 5

Point-Biserial Correlations

Variable	Parental Stress	Depression	Anxiety	Conduct Problems	Mindfulness
Income Source	-.098	-.234**	-.209*	-.191*	.088
Employment Status	-.136	-.178*	-.117	-.102	-.071

*p <.05; **p <.01

Moderation Analysis

To address hypothesis three, four separate moderation analyses were performed to investigate the moderated effect of mindfulness on the relationship between 1) SES and parental stress; 2) SES and depression; 3) SES and anxiety; 4) and SES and child behavioural problems. These models were examined while controlling for the effects of parent and child disability status. In predicting parental stress, a non-significant interaction effect was found between mindfulness and SES (b = -.01, t(124) = -.01 , p = .95). Similarly, there were non-significant interaction effects between mindfulness and SES when predicting depression (b = -.01, t(124) = -.27, p = .78), anxiety (b = .01, t(124) = .31 , p = .76) and behavioural problems (b = -.001, t(124) = -.05 , p = .96). Given these results, hypothesis three is not supported and it cannot be concluded that mindfulness moderates any of the hypothesised relationships. In line with recommendations by Wuensch (2016) the researcher reduced the models and performed further hierarchical multiple regression analyses on the data.

Hierarchical Multiple Regression Analysis

Four separate hierarchical multiple regression analyses were performed to assess the predictive power of trait mindfulness and SES on the dependent variables, while controlling for the confounding effects of parent and child disability status (see Table 6).

Table 6

Hierarchical Regression Models Predicting Parental Stress, Depression, Anxiety and Child Behavioural Problems

Parental Stress				
	b	*SE B*	*β*	*p*
Step 1				
Child Disability	5.23	2.41	.19	.032
Parent Disability	-0.69	2.59	-.02	.790
Step 2				
Child Disability	3.87	2.16	.14	.076
Parent Disability	-5.49	2.49	-.19	.029
SES	-0.86	0.74	-.09	.250
Mindfulness	-0.46	0.08	-.47	.000

R^2 = .04 for Step 1 (p = .098); ΔR^2 = .21 for Step 2 (p<.001)

Depression				
	B	*SE B*	*β*	*p*
Step 1				
Child Disability	2.82	1.36	.16	.041
Parent Disability	7.93	1.47	.43	.000
Step 2				
Child Disability	1.98	1.18	.12	.097
Parent Disability	4.90	1.37	.26	.000
SES	-0.60	0.41	-.10	.145
Mindfulness	-0.28	0.04	-.46	.000

R^2 = .23 for Step 1 (p <.001); ΔR^2 = .21 for Step 2 (p <.001)

Anxiety

	b	*SE B*	*β*	*p*
Step 1				
Child Disability	2.63	1.20	.17	.030
Parent Disability	7.02	1.30	.43	.000
Step 2				
Child Disability	1.84	1.05	.12	.080
Parent Disability	4.58	1.21	.29	.000
SES	-0.18	0.36	-.04	.618
Mindfulness	-0.26	0.04	-.47	.000

R^2 =.24 for Step 1 (p <.001); ΔR^2 = .20 for Step 2 (p <.001)

Child Behavioural Problems

	b	*SE B*	*β*	*p*
Step 1				
Child Disability	1.21	0.44	.24	.006
Parent Disability	0.79	0.47	.14	.096
Step 2				
Child Disability	1.17	0.43	.23	.007
Parent Disability	0.33	0.50	.06	.514
SES	-0.31	0.15	-.18	.036
Mindfulness	-0.02	0.02	-.11	.205

R^2 = .09 for Step 1 (p <.01); ΔR^2 = .05 for Step 2 (p <.05)

Parental stress.

In the first regression model (see Table 6), parent and child disability status were entered at Step 1, explaining 3.6% of the variance in parental stress scores ($F(2, 127) = 2.36$, $p = .098$). After adding SES and mindfulness at Step 2, the total variance explained by the model as a whole was 24.7% ($F(4, 125) = 10.26$, $p < .001$). SES and mindfulness explained an additional 21.1% of the variance in parental stress, after controlling for parent and child disability status (R^2 change = .21, F change (2, 125) = 17.55, $p < .001$). In the final model, only mindfulness was a significant predictor of parental stress ($\beta = -.47$, $p < .001$).

Depression.

In the second model (see Table 6), parent disability and child disability status were entered at Step 1, explaining 23% of the variance in depression scores ($F(2, 127) = 19.14$, $p < .001$). After adding SES and mindfulness at Step 2, the total variance explained by the model as a whole was 43.6% ($F(4, 125) = 24.17$, $p < .001$). SES and mindfulness explained an additional 20.5% of the variance in depression, after controlling for parent and child disability status (R^2 change = .21, F change (2, 125) = 22.67 $p < .001$). In the final model, only mindfulness ($\beta = -.46$, $p < .001$) and parent disability status ($\beta = .26$, $p < .001$) were significant predictors of depression.

Anxiety.

In the third model (see Table 6), parent and child disability status were entered at Step 1, explaining 23.5% of the variance in anxiety scores ($F(2, 127) = 19.56$, $p < .001$). After adding SES and mindfulness at Step 2, the total variance explained by the model as a whole was 43.8% ($F(4, 125) = 24.34$, $p < .001$). SES and mindfulness explained an additional 20.2% of the variance in anxiety, after controlling for parent and child disability status (R^2 change = .20, F change (2,125) = 22.50, $p < .001$). In the final model, only mindfulness ($\beta = -.47$, $p < .001$) and parent disability status ($\beta = .29$, $p < .001$) significantly predicted anxiety.

Child behavioural Problems.

In the fourth model (see Table 6), parent and child disability status were entered at Step 1, explaining 8.9% of the variance in conduct problem scores ($F(2, 127) = 6.22$, $p < .01$). After adding SES and mindfulness at Step 2, the total variance explained by the model as a whole was 13.5% ($F(4, 125) = 4.86$, $p < .01$). SES and mindfulness explained at additional 4.5% of the variance in behavioural problems, after controlling for parent and child disability status (R^2 change = .05, F change $(2,125) = 3.28$, $p < .05$). In the final model, only SES ($\beta = -.18$, $p < .05$) and child disability status ($\beta = .23$, $p < .01$) significantly predicted child conduct problem scores.

Discussion

This study examined the relationship between SES and stress and difficulties in families. In addition, the role of trait mindfulness was explored as a potential moderator in the relationship between SES and parental stress, depression, anxiety and child behavioural difficulties. The study found no evidence to suggest that trait mindfulness was a moderator in the relationship between SES and family difficulties.

Hypothesis one predicted a negative relationship between SES and family difficulties, and could not be fully supported. The results did not indicate a significant relationship between SES and parental stress. While there was stronger evidence to suggest a negative association between SES and parental depression, anxiety and child behavioural problems, the findings remained inconclusive.

Initial correlation analysis discovered that there was no association between income and any of the dependent variables. Indeed, previous studies have revealed inconsistent findings regarding the relationship between income and psychological distress in parents (e.g. Anderson, 2008; Raikes & Thomson, 2005). While income, education and employment are the usual components of SES considered in research (Barnett, 2008), it was deemed appropriate to exclude household income from subsequent analyses. Parental educational level, employment status and 'income source' were found to be more strongly associated with family difficulties, and were thus considered in the SES composite created. Nevertheless, when examining the socioeconomic indicators individually, inconsistencies were observed in the relationships hypothesised. For example, parental educational level was not significantly associated with parental stress or anxiety, in contrast to past research (e.g. Anderson, 2008; Can & Ginsburg-Block, 2016). However, there was a significant negative association between parental educational level, and depression and child behavioural problems, in line with findings by Gyamfi, Brooks-Gunn and Jackson (2001) and Webster-Stratton (1990).

Participants' main source of income (i.e. 'benefits' compared with 'wages') was the socioeconomic factor most strongly related to difficulties. It might be suggested that this variable more accurately captured parents that were experiencing 'economic hardship,' yet, the relationship between income source and 'parental stress' remained non-significant. Thus, the results only partially

support the evidence demonstrating the negative relationship between economic hardship and parental psychological distress and poor child outcomes (e.g. Benner & Kim, 2010; Conger et al., 1992; Parke et al., 2004).

Hypothesis two was upheld and the results showed that parents who scored lower on trait mindfulness were more likely to report greater problems with parental stress, depression, anxiety and child behavioural problems. These findings are supportive of research which has demonstrated a negative association between trait mindfulness and mental health difficulties in adults (e.g. Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006; Brown & Ryan, 2003). In addition, the findings indicate some support for Dumas' (2005) theory that family difficulties are associated with repeated, negative and 'automatic' patterns of thinking and responding in the parenting role.

Hypothesis three was not supported because there was a non-significant interaction effect between SES and trait mindfulness in each of the moderation models tested. It was deemed appropriate to drop the interaction term from the models and to assess the predictive power of the independent variables through regression analyses (Wuensch, 2016). The findings indicated that lower trait mindfulness was a relatively strong predictor for higher scores on the parental stress, depression and anxiety measures. However, trait mindfulness was not a significant predictor of child conduct problems. While lower SES significantly predicted child behavioural problems, SES was not found to be predictive of stress or psychological difficulties in parents.

In summary, the results suggest that trait mindfulness is a protective factor against stress and psychological difficulties in parents. In addition, there was some evidence to indicate a negative association between SES and child behavioural problems. However, SES was not strongly associated with psychological difficulties in parents. As such, trait mindfulness cannot be considered to moderate the relationship between SES and family difficulties. This unexpected finding warrants further investigation of the study's limitations.

Limitations

The measure of SES used by the researcher could be considered one of study's main limitations. While the composite score used was considered in relation to previous research and

preliminary analysis, it is acknowledged that the researcher did not use a standardised measure. Nevertheless, correlation analysis did reveal that the SES composite was strongly related to the individual socioeconomic indicators measured (e.g. education, income and employment), suggesting a degree of concurrent validity. However, the measure was not formally validated and thus caution must be used when interpreting the results.

Previous studies have highlighted the negative impact of 'area deprivation' on parental stress and family difficulties (Lamis et al., 2014). The researcher did not collect specific information on the area in which participants lived in (e.g. postcode). The English Indices of Deprivation (Smith et al., 2015) is a standardised measure developed to assess relative deprivation in areas across the UK (e.g. using data on crime levels and quality of the living environment). Therefore, this tool could have been used to more accurately assess levels of socioeconomic deprivation.

Additionally, it is possible that the measure of SES used did not adequately capture participants that were experiencing economic hardship. It has been acknowledged that the concepts of SES and economic hardship are sometimes used interchangeably in research (Barnett, 2008). However, researchers have highlighted the importance of viewing them as separate constructs (Conger & Donellan, 2007). Economic hardship is related to economic risk and shock, as well as subjective feeling of insecurity (Whelan & Maitre, 2005). It is usually measured through assessing money worries or levels of debt, and has been shown to be a robust predictor of psychological distress in families (e.g. Gershoff, Aber, Raver, & Lennon, 2007; Gyamfi et al., 2001; Zhang, Eamon, & Zhan, 2015). Interestingly, research by Coope and colleagues (2014), documenting British suicide rates since the 2008 economic recession, found that rates amongst Britain's poorest communities remained largely unchanged in contrast to some higher income groups. The importance of targeting mental health initiatives to individuals struggling with financial difficulties (e.g. debt) was highlighted. Nevertheless, it was acknowledged that the study analysed data up until 2011, and thus more recent changes to the welfare system following the recession were likely to have affected lower SES groups disproportionally (Coope et al., 2014). Indeed, research by Barr and colleagues (2015) found that self-reported mental health difficulties had increased most amongst socioeconomically disadvantaged groups in the period following the introduction of welfare reform policies in Britain.

Other researchers have demonstrated the negative impact of difficulties such as 'food insecurity' on stress and difficulties within families (e.g. Huang, Matta Oshima, & Kim, 2010; Slack & Yoo, 2005). Therefore, considering recent economic and socio-political trends in the UK (e.g. cuts in welfare and the rise of food poverty; Loopstra et al., 2015), it would have been useful to further consider the impact of economic hardship and food insecurity on families.

The recruitment strategy used in the present study can be considered a further limitation. While attempts were made to recruit participants from locations which varied in levels of affluence, convenience sampling methods were used and thus there was an over-representation of participants from higher SES groups. For example, 63% of the sample had a university level qualification (or equivalent) or higher compared to 27.2% - the national average for adults aged 16 and over in the UK (Office for National Statistics [ONS], 2014). Only one person (0.8%) indicated that they had no qualifications, compared to the national average of 15% (ONS, 2014). Furthermore, approximately 60% of participants had a total household income higher than the national median of £26,300 (ONS, 2017). Approximately 19% of the sample indicated that they relied on welfare benefits as the main source of their income, compared to 80% of participants that relied on wages. Therefore, it is possible that this study did not fully represent families experiencing difficulties related to socioeconomic deprivation.

The underrepresentation of lower SES groups was surprising because the study was conducted in Liverpool, which is amongst one of the most socioeconomically deprived cities in the country (ONS, 2016). It is estimated that 50% of households in Liverpool have an annual household income of less than £20,000 (compared to 34% of households nationally; Tate & Morawiec, 2016). In this study, approximately 40% indicated that their income was less than £25,999. However, it has also been indicated that Liverpool has one of the widest gaps in income inequality in the UK (Tate & Morawiec, 2016). It is acknowledged that all of the recruitment sites in this study were based in the South of the city. While each of the sites were located in areas of varying levels of deprivation, only one site was located in an area which was among the most deprived in the city (Liverpool City Council, 2011). The researcher attempted to contact sites in areas of similar levels of deprivation in the North of the city, however, these sites proved more difficult to contact and engage with. The

difficulty of engaging with lower SES groups has been highlighted by previous researchers, and thus the validity and generalisability of research examining the effects of SES on families is threatened (Hoff et al., 2002). In hindsight, it would have been appropriate to include a significantly larger proportion of parents from lower SES backgrounds, to fully capture the experiences of this group. Researchers must find better ways to engage with harder-to-reach populations.

Nevertheless, it is important not to undermine the difficulties that were reported by participants who took part in the present study. The mean scores for parental stress, anxiety, depression and child behavioural problems were all higher than those reported in other studies (see Table 3). A possible explanation for this finding is that the 'comparative means' were taken from studies which used 'non-clinical' samples. For example, Berry and Jones (1995) assessed parental stress in mothers with 'typically developing children.' Kroenke and colleagues (2001) used the PHQ-9 with adults without 'depressive disorder.' While the present study was conducted in the community, parents and children were not excluded on the basis of having a mental health problem or disability. Therefore, it is possible that the inclusion of this group led to the higher mean scores reported. Parents who reported having a physical or mental health condition made up 12.9% of the overall group. The Family Resources Survey (Department for Work & Pensions [DWP], 2017) has estimated that 21% of people in the UK have a physical disability or mental health condition. This percentage is estimated to be 25% for people living in the North West of England (DWP, 2017). Therefore, it is likely that participants with disabilities were underrepresented in the present study. Given that people with disabilities are more likely to be socioeconomically disadvantaged (Heslop, 2013), it would have been pertinent to include more people from this population.

Moreover, it is relevant to highlight that the reasons why one might or might not experience parental stress or psychological difficulties are multifaceted and complex (Anderson, 2008). Social, psychological, biological and historical factors are all indicated to contribute to the development of psychological difficulties (Division of Clinical Psychology [DCP], 2011). For example, there is robust evidence suggesting a causal link between past experiences of abuse and trauma and the development of mental health problems (e.g. Tennant, 2002). In addition, previous research has highlighted the important role of contextual factors such as a lack of social support and high levels of family conflict

in the development of parental stress (e.g. Abidin, 1992; Anderson, 2008; Saisto et al., 2008). Conversely, high levels of social support, community participation and cohesion have been shown to be protective in the development of mental health problems (Dupere & Perkins, 2007). Anecdotally, in this study, the manager from the least affluent recruitment site commented that parents who attended the centre often came from tight-knit and cohesive communities. Thus, exploring the possible role of other important risk and protective factors for families would be an important consideration for future research in this domain.

Clinical Implications

This study did not provide support for the hypothesis that mindfulness moderates the relationship between SES and family difficulties. While this result might have been found because of methodological limitations as discussed, it is also important to acknowledge the possibility that trait mindfulness might not be important in the relationship between socioeconomic disadvantage and parental stress. However, when examined individually there was evidence to suggest that lower trait mindfulness was a strong predictor of parental stress and psychological difficulties across the population studied. It is acknowledged that the sample size was relatively small and that the global mindfulness measure used was not validated. Nevertheless, the findings remain promising and have potentially important implications for clinical practice.

Emerging evidence suggests that training parents in mindfulness techniques can enhance the effectiveness of traditional parent training interventions which use a behavioural approach to target conduct problems in children (Coatsworth et al., 2010). Dumas (2005) has suggested that mindfulness training can support parents to reduce negative, automatic patterns of responding to children that are maintained by strong, difficult emotions. Indeed, studies which have used a mindfulness-based approach with parents have demonstrated improvements in parental mental health post-intervention (Eames et al., 2015), as well improvements in child behaviours and the quality of the parent-child relationship (Coatsworth et al., 2010). Townshend, Jordan, Stephenson and Tsey (2016) conducted a systemic review of the evidence on the effectiveness of mindful parenting programmes to date. Seven randomised controlled trials were evaluated and the results indicated that mindful parenting

programmes reduced parental stress, increased emotional awareness and decreased parents' emotional reactivity and dismissal of their children (for both parents of young children and adolescents). However, the review concluded that due to several methodological limitations of the studies reviewed (e.g. small sample sizes and potential bias due to lack of 'blinding') the results must be viewed cautiously (Townshend, Jordan, Stephenson & Tsey, 2016). While the current study adds to the evidence base indicating that trait mindfulness is a protective factor against psychological distress in parents (Conner & White, 2014; Jones et al., 2014), it is acknowledged that further, methodologically robust intervention studies are needed to further support the use of mindfulness with parents. Researchers have recommended that based on the research to date, mindfulness interventions may be a useful 'addition' to more traditional evidence-based parent training interventions which use a behavioural approach to support families (Dumas, 2005; Coatsworth et al., 2010; Townshend et a., 2016).

Furthermore, as discussed, this study highlighted the negative impact of having a physical or mental health condition (and having a child with disability) on stress and difficulties within families, above and beyond other risk factors (e.g. income level, relationship-status) in the population studied. This finding is particularly relevant given the on-going cuts to disability benefits, which are proposed to further compound mental health problems in these populations (McGrath et al., 2016). Thus, this paper highlights the increased vulnerability of such groups and recommends that mental health and support initiatives are targeted accordingly.

Future Research and Conclusion

This research provided partial evidence to indicate a negative association between SES and family difficulties; however, it would be important for future studies to use a larger proportion of parents from socioeconomically disadvantaged backgrounds. A more nuanced measure of economic hardship is indicated, in order to fully capture the impact of recent economic policies and trends in Britain (McGrath et al., 2016). This study provided evidence for the protective role of trait mindfulness in a population of British parents from relatively diverse backgrounds. However,

additional research using the same global measure of mindfulness is needed to further substantiate these findings.

Moreover, this study highlighted the particular vulnerability of parents and children with physical and mental health difficulties. Both of these groups are at higher risk of experiencing poverty and social exclusion (Emerson, 2003; Heslop, 2013), and thus greater support and resources are indicated for these families. This paper concludes by suggesting that mindfulness interventions might be one way in which clinical psychologists can support families in need from a wide range of backgrounds. However, additional research is needed to fully understand the usefulness of mindfulness-based interventions with parents in comparison to traditional parent training interventions. In addition, increasingly, psychologists are being encouraged to intervene at a socio-political level (e.g. by publicly condemning austerity policies; Harper, 2016) to support Britain's most vulnerable families. Thus, further up-to-date British research exploring the impact of socioeconomic factors on stress and psychological difficulties is advocated.

References

Abidin, R. (1992). The determinants of parenting behavior. *Journal of Clinical Child Psychology, 21*(4), 407-412. doi: 10.1207/s15374424jccp2104_12

Anderson, L. S. (2008). Predictors of parenting stress in a diverse sample of parents of early adolescents in high-risk communities. *Nursing Research, 57*(5), 340-350. doi: 10.1097/01.NNR.0000313502.92227.87

Baer, R. A. (2014). *Mindfulness-based treatment approaches: Clinician's guide to evidence base and applications* (2nd ed.). San Diego: Elsevier.

Baer, R. A., Smith, G. T., Hopkins, J., Krietemeyer, J., & Toney, L. (2006). Using self-report assessment methods to explore facets of mindfulness. Assessment, *13,* 27–45. doi: 10.1177/1073191105283504

Barnett, M. (2008). Economic disadvantage in complex family systems: Expansion of family stress models. *Clinical and Family Psychology Review, 11*(3), 145-161. doi: 10.1007/s10567-008-0034-z

Barr, B., Kinderman, P., & Whitehead, M. (2015). Trends in mental health inequalities in England during a period of recession, austerity and welfare reform 2004 to 2013. *Social Science & Medicine, 147,* 324-331. doi: 10.1016/j.socscimed.2015.11.009

Beard, C., & Bjorgvinsson, T. (2014). Beyond generalized anxiety disorder: Psychometric properties of the GAD-7 in a heterogeneous psychiatric sample. *Journal of Anxiety Disorders, 28,* 547-552. doi: 10.1016/j.janxdis.2014.06.002

Benner, A. D., & Kim, S. Y. (2010). Understanding Chinese American adolescents' developmental outcomes: Insights from the family stress model. *Journal of Research on Adolescence, 20*(1), 1-12. doi: 10.1111/j.1532-7795.2009.00629.x

Berry, J. O., & Jones, W. H. (1995). The parental stress scale: Initial psychometric evidence. *Journal of Social and Personal Relationships, 12,* 463-472. doi: 10.1177/0265407595123009

Bloomquist, M. L., & Schnell, S. V. (2002). *Helping children with aggression and conduct problems: Best practices for intervention.* New York: Guildford Press.

Bohlmeijer, E., ten Klooster, P. M., Fledderus, M., Veehof, M., & Baer, R. (2011). Psychometric properties of the five facet mindfulness questionnaire in depressed adults and development of a short form. *Assessment, 18,* 308-320. doi: 10.1177/1073191111408231

Brewer, M., Browne, J., & Joyce, R. (2011). *Child and working-age poverty from 2010 to 2020.* London: IFS.

Briggs, S. R., & Cheek, J. M. (1986). The role of factor analysis in the development and evaluation of personality scales. *Journal of Personality, 54,* 106-148. DOI: 10.1111/j.1467 -6494.1986.tb00391.x

Brown, K. W., & Ryan, R. M. (2003). The benefits of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology*, 84, 822–848. doi: 10.1037/0022-3514.84.4.822

Can, D., & Ginsburg-Block, M. (2016). Parenting stress and home-based literacy interactions in low -income preschool families. *Journal of Applied Developmental Psychology, 46,* 51-62. doi: 10.1016/j.appdev.2016.07.002

Carmody, J., & Baer, R. (2008). Relationships between mindfulness practice and levels of mindfulness, medical and psychological symptoms and well-being in a mindfulness-based stress reduction program. *Journal of Behavioral Medicine*, *31*(1), 23-33. doi:10.1007/s10865 -007-9130-7

Chang, S., Stuckler, D., Yip, P., & Gunnell, D. (2013). Impact of 2008 global economic crisis on suicide: Time trend study in 54 countries. *British Medical Journal, 347,* 1322-1331. doi: https://doi.org/10.1136/bmj.f5239

Choi, J., & Pyun, H. (2014). Nonresident fathers' financial support, informal instrumental support, mothers' parenting, child development in single-mother families with low income. *Journal of Family Issues, 35*(4), 526-546. doi: 10.1177/0192513X13478403

Coatsworth, J. D., Duncan, L., Greenberg, M., & Nix, R. (2010). Changing parents' mindfulness, child management skills and relationship quality with their youth: Results from a randomized pilot intervention trial. *Journal of Child and Family Studies, 19,* 203-217. doi: 10.1007/s10826-009-9304-8

Cohen, J. (1977). *Statistical power analysis for the behavioral sciences*. Hillsdale, New Jersey, USA: Lawrence Erlbaum. doi: 10.1016/b978-0-12-179060-8.50016-5

Combs-Orme, T., Cain, D. S., & Wilson, E. E. (2004). Do maternal concerns at delivery predict parenting stress during infancy? *Child Abuse & Neglect, 28,* 377-392. doi: 10.1016/j.chiabu.2003.09.019

Conger, R. D., Conger, K. J., Elder, G. H., Lorenz, F. O., Simons, R. L., & Whitbeck, L. B. (1992). A family process model of economic hardship and adjustment of early adolescent boys. *Child Development, 63*(3), 526-41. doi: 10.2307/1131344

Conger, R. D., Conger, K. J., & Martin, M. J. (2010). Socioeconomic Status, Family Processes, and Individual Development. *Journal of Marriage and Family, 72*(3), 685-704. doi: 10.1111/j.1741-3737.2010.00725.x

Conger, R. D., & Donellan, M. B. (2007). An interactionist perspective on the socioeconomic context of human development. *Annual Review of Psychology, 58,* 175–199. doi:10.1146/annurev.psych.58.110405.085551

Conner, C. M., & White, S. W. (2014). Stress in mothers of children with autism: Trait mindfulness as a protective factor. *Research in Autism Spectrum Disorders, 8,* 617 -624. doi: 10.1016/j.rasd.2014.02.001

Coope, C., Gunnell, D., Hollingworth, W., Hawton, K., Kapur, N., Fearn, V., & ... Metcalfe, C. (2014). Suicide and the 2008 economic recession: Who is most at risk? Trends in suicide rates in England and Wales 2001-2011. *Social Science & Medicine, 117,* 76-85. doi:10.1016/j.socscimed.2014.07.024

Cooper, N., & Dumpleton, S. (2013). *Walking the breadline: The scandal of food poverty in 21st century Britain.* Oxford: Oxfam.

De Agostini, P., Hills, J., & Sutherland, H. (2014). *Were we really all in it together? The distributional effects of the 2010-2015 UK Coalition government's tax-benefit policy changes.* London: LSE.

Deater-Deckard, K., Pickering, K., Dunn, J. F., & Golding, J. (1998). Family structure and depressive symptoms in men preceding and following the birth of a child. *The American Journal of Psychiatry, 155*(6), 818-823. doi: 10.1176/ajp.155.6.818

Department for Work and Pensions (DWP). (2017). *Family resources survey 2015/16.* DWP: London.

Division of Clinical Psychology. (2011). *Good practice guidelines on the use of psychological formulation.* Leicester: BPS.

Dumas, J.E. (2005). Mindfulness-based parent training: Strategies to lessen the grip of automaticity in families with disruptive children. *Journal of Clinical Child and Adolescent Psychology*, *34*(4), 779-91. doi: 10.1207/s15374424jccp3404_20

Dupere, V., & Perkins, D. (2007). Community types and mental health: A multilevel study of local environmental stress and coping. *American Journal of Community Psychology, 39*(2), 107 -119. doi: 10.1007/s10464-007-9099-y

Eames, C., Crane, R. S., Gold, E., & Pratt, S. (2015). Mindfulness-based wellbeing for socio -economically disadvantaged parents: A pre-post pilot study. *Journal of Children's Services, 10,* 2-33. doi: 10.1108/JCS-09-2014-0040

Emerson, E. (2003). Mothers of children and adolescents with intellectual disability: Social and economic situation, mental health status, and the self-assessed social and psychological impact of the child's difficulties. *Journal of Intellectual Disability Research, 47*(5), 385-399. doi: 10.1046/j.1365-2788.2003.00498.x

Faul, F., Erdfelder, E., Buchner, A., & Lang, A.G. (2009). Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods, 41*, 1149 -1160. doi: 10.3758/brm.41.4.1149

Field, A. (2013). *Discovering statistics using IBM SPSS Statistics.* London: SAGE.

Gard, T., Brach, N., Hölzel, B. K., Noggle, J. J., Conboy, L. A., & Lazar, S. W. (2012). Effects of a yoga-based intervention for young adults on quality of life and perceived stress: The potential mediating roles of mindfulness and self-compassion. *Journal of Positive Psychology, 7*(3), 165-175. doi:10.1080/17439760.2012.667144

Gershoff, E. T., Aber, L. J., Raver, C. C., & Lennon, M. C. (2007). Income is not enough: Incorporating material hardship into models of income associations with parenting and child development. *Child Development, 78*(1), 70–95. doi: 10.1111/j.1467-8624.2007.00986.x

Goodman, R. (1997). The strengths and difficulties questionnaire: A research note. *Journal of Child Psychology and Psychiatry, 38,* 581-586. DOI: 10.1111/j.1469-7610.1997.tb01545.x

Goodman, R. (2001). Psychometric properties of the strengths and difficulties questionnaire. *Journal of the American Academy of Child and Adolescent Psychiatry, 40,* 1337 -1345. doi: 10.1097/00004583-200111000-00015

Gu, J., Strauss, C., Bond, R., & Cavanagh, K. (2015). How do mindfulness-based cognitive therapy and mindfulness-based stress reduction improve mental health and wellbeing? A systematic review and meta-analysis of mediation studies. *Clinical Psychology Review, 37,* 1-12. doi: 10.1016/j.cpr.2015.01.006

Gu, J., Strauss, C., Crane, C., Barnhofer, T., Karl, A., Cavanagh, K., & Kuyken, W. (2016). Examining the factor structure of the 39-item and 15-item versions of the Five Facet Mindfulness Questionnaire before and after mindfulness-based cognitive therapy for people with recurrent depression. *Psychological Assessment, 28*(7), 791-802 doi:10.1037/pas0000263

Gyamfi, P., Brooks-Gunn, J., & Jackson, A. P. (2001). Associations between employment and financial and parental stress in low-income single black mothers. *Women & Health, 32*(1/2), 119-135. doi: 10.1300/J013v32n01_06

Harnett, P. H., & Dawe, S. (2012). Review: The contribution of mindfulness-based therapies for children and families and proposed conceptual integration. *Child and Adolescent Mental Health, 4,* 195-208. doi: 10.1111/j.1475-3588.2011.00643.x

Harper, D. (2016). Beyond individual therapy. *The Psychologist, 29*(6), 440-444.

Hayes, A. F. (2012). PROCESS: A versatile computational tool for observed variable mediation, moderation, and conditional process modeling [White paper]. Retrieved from http://www.afhayes.com/public/process2012.pdf.

Heslop, P. (2013). *Disabled people and their relationship with poverty.* Bristol: Poverty and Social Exclusion in the UK.

Hoff, E., Laursen, B., & Tardiff, T. (2002). Socioeconomic status and parenting. In M. H. Borenstein (Ed.), *Handbook of parenting* (pp. 231-52). Mahwah, New Jersey, USA: Lawrence Erlbaum.

Huang, J., Matta Oshima, K. M., & Kim, Y. (2010). Does food insecurity affect parental characteristics and child behavior? Testing mediation effects. *Social Service Review, 84*(3), 381-401. doi: 10.1086/655821

Hutchings, J., Bywater, T., Daley, D., Gardner, F., Whitaker, C., Jones, K., Eames, C., & Edwards, R. T. (2007). Parenting intervention in Sure Start services for children at risk of developing conduct disorder: Pragmatic randomized controlled trial. *British Medical Journal, 334,* 678-681.

IBM. (2016). *IBM SPSS statistics for Windows, version 24.0.* Armonk, New York, USA: IBM Corp.

Jansen, P., Raat, H., Mackenbach, J., Hofman, A., Jaddoe, V., Bakermans-Kranenburg, M., & ... Tiemeier, H. (2012). Early determinants of maternal and paternal harsh discipline: The Generation R study. *Family Relations, 61*(2), 253-270. doi:10.1111/j.1741-3729.2011.00691.x

Jones, L., Hastings, R. P., Totsika, V., Keane, L., & Rhule, N. (2014). Child behaviour problems and parental well-being in families of children with autism: The mediating role of mindfulness and acceptance. *American Journal on Intellectual and Developmental Disabilities, 119,* 171-185. doi: 10.1352/1944-7558-119.2.171

Kabat-Zinn, J. (1994). *Wherever you go, there you are: Mindfulness meditation for everyday life.* New York, USA: Hyperion.

Kabat-Zinn, J. (2003). Mindfulness-based interventions in context: Past, present, and future. *Clinical Psychology: Science and Practice, 10,* 144-156. doi: 10.1093/clipsy/bpg016

Katz, I. Corlyon, J., La Placa, V., & Hunter, S. (2007). *The relationship between parenting and poverty*. York: Joseph Rowntree Foundation.

Kemp, P. A., Bradshaw, J., Dornan, P. Finch, N., & Mayhew, E. (2004). *Ladders out of poverty*. York: Joseph Rowntree Foundation.

Keng, S. L., Smoski, M. J., & Robins, C. J. (2011). Effects of mindfulness on psychological health: A review of empirical studies. *Clinical Psychology Review, 31,* 1041-1056. doi: 10.1016/j.cpr.2011.04.006

Kroenke, K., Spitzer R. L., & Williams, J. B. (2001). The PHQ-9. Validity of a brief depression severity measure. *Journal of General Internal Medicine, 16,* 606-613. doi:10.1046/j.1525-1497.2001.016009606.x

Lamis, D., Wilson, C., Tarantino, N., Lansford, J., & Kaslow, N. (2014). Neighborhood disorder, spiritual well-being, and parenting stress in African American women. *Journal of Family Psychology*, *28*(6), 769-778. doi: 10.1037/a0036373

Leigh, B., & Milgrom, J. (2008). Risk factors for antenatal depression, postnatal depression, and parenting stress. *BMC Psychiatry, 8,* 1-11. doi: 10.1186/1471-244X-8-24

Liverpool City Council. (2011). *The Index of Multiple Deprivation 2010: A Liverpool Analysis.* Liverpool: Liverpool City Council.

Loopstra, R., Reeves, A., Taylor-Robinson, D., Barr, B., McKee, M., & Stickler, D. (2015). Austerity, sanctions and the rise of food banks in the UK. *BMJ, 350,* 1-6. doi: 10.1136/bmj.h1775

Löwe, B., Decker, O., Müller, S., Brähler, E., Schellberg, D., Herzog, W., & Herzberg, P. Y. (2008). Validation and Standardization of the Generalized Anxiety Disorder Screener (GAD-7) in the General Population. *Medical Care*, *46*(3). 266-274. doi: 10.1097/MLR.0b013e318160d093

Malik, N. M., Boris, N. W., Heller, S. S., Harden, B. J., Squires, J., Chazan-Cohen, R., & … Kaczynski, K. J. (2007). Risk for maternal depression and child aggression in Early Head Start families: A test of ecological models. *Infant Mental Health Journal, 28*(2), 171-191. doi: 10.1002/imhj.20128

McGrath, L., Griffin, V., & Mundy, E. (2016). The psychological impact of austerity: A briefing paper by Psychologists Against Austerity. *Mental Health Nursing, 36*(1), 12-17.

McLoyd, V. C. (1998). Socioeconomic disadvantage and child development. *The American Psychologist, 53*(2), 185-204. doi: 10.1037/0003-066X.53.2.185

McPherson, A. V., Lewis, K. M., Lynn, A. E., Haskett, M. E., & Behrend, T. S. (2009). Predictors of parenting stress for abusive and nonabusive mothers. *Journal of Child and Family Studies, 18,* 61–69. doi:10.1007/s10826-008-9207-0

Meltzer, H., Gatward, R., Goodman R., & Ford, T. (2000). *Mental health of children and adolescents in Great Britain.* London: The Stationery Office.

Mistry, R. S., Biesanz, J. C., Taylor, L. C., Burchinal, M., & Cox, M. J. (2004). Family income and its relation to preschool children's adjustment for families in the NICHD study of early child care. *Developmental Psychology, 40*(5), 727–745. doi:10.1037/0012-1649.40.5.727

National Institute for Health and Clinical Excellence (NICE). (2013). *Antisocial behaviour and conduct disorders in children and young people: Recognition, intervention and management.* Retrieved from http://www.nice.org.uk/guidance/cg158/chapter/1 -recommendations.

Newcombe, B. C., & Weaver, A. D. (2016). Mindfulness, cognitive distraction, and sexual well-being in women. *Canadian Journal of Human Sexuality, 25*(2), 99-108. doi: 10.3138/cjhs.252-A3

Office for National Statistics. (2014). *Local area analysis of qualifications across England and Wales.* London: ONS.

Office for National Statistics. (2016). *Towns and cities analysis, England and Wales, March 2016.* London: ONS.

Office for National Statistics. (2017). *Household disposable income and inequality in the UK: Financial year ending 2016.* London: ONS.

Pallant, J. (2016). *SPSS survival manual.* Berkshire: Open University Press.

Parke, R. D., Coltrane, S., Duffy, S., Buriel, R., Dennis, J., Powers, J., & … Widaman, K. F. (2004). Economic stress, parenting, and child adjustment in Mexican American and European

American families. *Child Development, 75*(6), 1632-56. doi: 10.1111/j.1467-8624.2004.00807.x

Pinto-Meza, A., Serrano-Blanco, A., Peñarrubia, M. T., Blanco, E., & Haro, J. M. (2005). Assessing depression in primary care with the PHQ-9: Can it be carried out over the telephone? *Journal of General Internal Medicine, 20*(8), 738-742. doi: 10.1111/j.1525-1497.2005.0144.x

Qualtrics. (2016). *Qualtrics survey software*. Utah, USA: Qualtrics LLC.

Rafferty, Y., & Griffin, K. W. (2010). Parenting behaviours among low-income mothers of preschool age children in the USA: Implications for parenting programmes. *International Journal of Early Years Education, 18*(2), 143-157. doi: 10.1080/09669760.2010.494428

Raikes, H. A., & Thompson, R. A. (2005). Efficacy and social support as predictors of parenting stress among families in poverty. *Infant Mental Health Journal, 26*(3), 177-190. doi: 10.1002/imhj.20044

Reeves, A., Stuckler, D., McKee, M., Gunnell, D., Chang, S., & Basu, S. (2012). Increase in state suicide rates in the USA during economic recession. *The Lancet, 380*(9856), 1813-1814 doi:10.1016/S0140-6736(12)61910-2

Reyno, S., & McGrath, P. (2006). Predictors of parent training efficacy for child externalizing behaviour problems – A meta-analytic review. *Journal of Child Psychology and Psychiatry, 47,* 99-111. doi: 10.1111/j.1469-7610.2005.01544.x

Rose, B. M., Holmbeck, G. N., Coakley, R. M., & Franks, E. A. (2004). Mediator and moderator effects in developmental and behavioral pediatric research. *Journal of Developmental and Behavioral Pediatrics, 25,* 58–67. doi:10.1097/00004703-200402000-00013

Saisto, T., Salmela-Aro, K., Nurmi, J., & Halmesmaki, E. (2008). Longitudinal study on the predictors of parental stress in mothers and fathers of toddlers. *Journal of Psychosomatic Obstetrics and Gynaecology, 29*(3), 213-222. doi:10.1080/01674820802000467

Shapiro, S. L., Warren Brown, K., Thoresen, C., & Plante, T. G. (2011). The moderation of mindfulness-based stress reduction effects by trait mindfulness: Results from a randomized controlled trial. *Journal of Clinical Psychology, 67,* 267-277. doi: 10.1002/jclp.20761

Slack, K., & Yoo, J. (2005). Food hardship and child behavior problems among low-income children. *Social Service Review, 79*(3), 511-36. doi: 1086/430894

Smith, T., Noble, M., Noble, S., Wright, G., McLennan, D., & Plunkett, E. (2015). *The English Indices of Deprivation: Technical report.* London: Department for Communities and Local Government.

Spitzer, R. L., Kroenke, K., Williams, J. B., & Lowe, B. (2006). A brief measure for assessing Generalised Anxiety Disorder: The GAD-7. *Archives of Internal Medicine, 166,* 1092-1097. doi: 10.1001/archinte.166.10.1092

Stuckler, D., Basu, S., Suhrcke, M., Coutts, A., & McKee, M. (2009). The public health effect of economic crises and alternative policy responses in Europe: An empirical analysis. *The Lancet, 374,* 315-323. doi:10.1016/S0140-6736(09)61124-7

Tate, P., & Morawiec, J. (2016). *Wealth of the nation 2016: A study of household income in Britain.* London: CACI.

Tennant, C. (2002). Life events, stress and depression: A review of recent findings. *Australian and New Zealand Journal of Psychiatry, 36,* 173–82.

Torjesen, I. (2016). Austerity cuts are eroding benefits of Sure Start children's centres. *British Medical Journal, 532,* 1-2. doi: 10.1136/bmj.i335

Townshend, K., Jordan, Z., Stephenson, M., & Tsey, K. (2016). The effectiveness of mindful parenting programs in promoting parents' and children's wellbeing: a systematic review. *JBI Database of Systematic Reviews and Implementation Reports*, *14*(3), 139-180. doi:10.11124/JBISRIR-2016-2314

Webster-Stratton, C. (1990). Stress: A potential disruptor of parent perceptions and family interactions. *Journal of Clinical Child Psychology, 19*, 302-312. doi: 10.1207/s15374424jccp19042

Whelan, C., & Maitre, B. (2005). Vulnerability and multiple deprivation perspectives on economic exclusion in Europe: A latent class analysis. *European Societies, 7*(3), 423-50. doi: 10.1080/14616690500194050

Wickham, S., Whitehead, M., Taylor-Robinson, D., & Barr, B. (2017). The effects of a transition into poverty on a child and maternal mental health: A longitudinal analysis of the UK millennium cohort study. *The Lancet Public Health, 2*(3), 141-148. doi: 10.1016/S2468-2667(17)30011-7

Williams, M., Dalgleish, T., Karl, A., & Kuyken, W. (2014). Examining the Factor Structures of the Five Facet Mindfulness Questionnaire and the Self-Compassion Scale. *Psychological Assessment*, *26*(2), 407-418. doi: 10.1037/a0035566

Wuensch, K. L. (2016). *Reporting the results from a simple moderation analysis.* Retrieved from http://core.ecu.edu/psyc/wuenschk/StatsLessons.htm.

Zhang, S., Eamon, M. K., & Zhan, M. (2015). Neighborhood disorder, perceptions of neighborhood social capital, and maternal stress: Exploration of a mediating mechanism. *Journal of Community Psychology, 43*(3), 278-295. doi: 10.1002/jcop.21678

Appendix A

Systematic Review Protocol

A systematic review of the evidence on the relationship between socioeconomic disadvantage and parental stress in disadvantaged families

Participants/population

Inclusion criteria

The review will consist of studies that: 1) Include a sample of parents or primary care givers with children aged 18 years or younger 2) Include a measure of socioeconomic status (e.g. income, education, employment) 3) include a measure of parental stress 4) include an overrepresentation of parents from low SES backgrounds 5) include quantitative studies that assess the relationship between SES and parenting stress 6) include studies written in English

Exclusion criteria

The following papers will be excluded: 1) studies with participants with disabilities or specific conditions 2) non-peer reviewed papers 2) Non-English, non-Western studies 3) qualitative studies

Searches

The following databases will be searched: Social Sciences Citation Index, MEDLINE and PsycInfo.

The search terms that will be used will relate to socioeconomic status and parental stress.

Specifically, the following search terms will be used:

- "socioeconomic" or socio-economic" or "socio economic" or "social class" or "social status" or income or poverty or poor or disadvantage* or depriv* or economic or financial AND
- "parenting stress" or "parental stress"

Selection and data extraction procedure

During the first stage, the reviewer (AA) will screen all of the titles and abstracts of the search items generated. Duplicates will be excluded and the relevant studies will be exported to EndNote. The reviewer will then screen the full articles for suitability. Additional searches will be carried out by reviewing the reference list of each article. Finally, the included papers will be screened using a suitable quality assessment tool.

Appendix B

Quality Assessment Tool

Quality Assessment Tool (adapted from William et al. 2010)

Grade each criterion as "Yes," "No," "Partially," or "Can't tell." Factors to consider when making an assessment are listed under each criterion.

1. **Unbiased selection of the cohort**

   Factors that help reduce selection bias:
   - Inclusion/exclusion criteria
     - Clearly described
   - Recruitment strategy
     - Clearly described
     - Relatively free from bias (Attempts at random recruitment are best. selection bias might be introduced, e.g., by recruitment via advertisement)
     - If a comparison group was used, was the sample appropriate, and did the study investigators ensure groups were comparable by matching, etc.
     - Sample is representative of population of interest (low SES).

2. **Sample size calculated**

   Factors to consider:
   - Did the authors report conducting a power analysis or describe some other basis for determining the adequacy of study group sizes for the primary outcome(s) of interest to us?
   - Did the eventual sample size deviate by $\leq$ 10% of the sample size suggested by the power calculation? (only applicable if power calculation conducted)

3. **Adequate description of the cohort?**

   Factors to consider:

   - Age (of parents, of children)
   - Gender (of parents, of children)
   - Ethnicity
   - Marital Status
   - Financial status (e.g. income level, employment)
   - Education

4. **Validated method for ascertaining parenting stress?**

   Factors to consider:

   - Was the method used to ascertain parenting stress clearly described? (Details should be sufficient to permit replication in new studies)
   - Was a valid and reliable measure/s (e.g. standardised, Cronbach Alpha's reported, etc) used to ascertain parenting stress? (self-report measures tend to have lower reliability and validity than clinical interview). Note that measures that consist of single items of scales taken from larger measures are likely to lack content validity and reliability.
   - Were these measures implemented consistently across all study participants?

5. **Missing data**

   Factors to consider:

   - Did missing data from any group exceed 20%?
   - In longitudinal studies consider attrition over time as a form of missing data. Note that the criteria of < 20% missing data may be unrealistic over longer follow-up periods.
   - If missing data is present and substantial, were steps taken to minimize bias (e.g., sensitivity analysis or imputation).

6. **Analysis controls for confounding data**

   Factors to consider for controlled studies:

   - Does the study identify and control for important confounding variables and effect modifiers? Confounding variables are risk factors that are correlated with the independent variable (SES measure) and outcome (parenting stress) and may therefore bias the estimation of the effect of the independent variable on outcome if unmeasured. These may include other demographic variables or clinical variables (e.g. age, race or disability status of the participants).
   - Did the study control for likely demographic and clinical confounders? For example, using multiple regression to adjust for demographic or clinical factors likely to be correlated with predictor and outcome?

Appendix C

Quality Assessment Ratings (DO)

Table C1
Second Researcher (DO) Quality Assessment Ratings

Study	Unbiased selection of cohort	Sample size calculated	Adequate description of the cohort	Validated method for ascertaining parenting stress	Adequate handling of missing data	Analysis controls for confounding data
Anderson 2008	Partial	No	Yes	Yes	Partial	Yes
Budd et al. 2006	Partial	Yes	Yes	Yes	Partial	Partial
Can & Ginsburg-Block 2016	Partial	Yes	Yes	Yes	No	Partial
Choi & Pyun 2014	Partial	No	Yes	No	Partial	No
Coley & Schindler 2008	Yes	No	No	No	Yes	Partial
Combs-Orme et al 2004	Partial	No	Yes	Yes	Yes	Partial
Gyamfi et al. 2001	Yes	No	Yes	No	No	Yes
Harden et al. 2014	No	No	Yes	Yes	No	No
Henninger & Luze 2014	Partial	No	Yes	Yes	Yes	No
Huang et al. 2010	No	No	Yes	No	No	Yes
Malik et al. 2007	Partial	No	Yes	Yes	Yes	Partial
Rafferty et al. 2010	partial	No	Partial	Yes	Yes	Yes
Raikes & Thompson 2005	Partial	No	Partial	Yes	No	Yes
Ryan et al. 2009	Partial	No	Yes	No	No	Yes
Slack & Yoo 2005	Yes	No	Partial	No	Partial	Yes
Zhang et al. 2015	Yes	No	Yes	No	Yes	Yes

Appendix D

Journal Guidelines for Authors

Parenting: Science and Practice

Instructions for Authors

Thank you for choosing to submit your paper to us. Complete guidelines for preparing and submitting your manuscript to this journal are provided below.

MANUSCRIPT SUBMISSION

Cover Letter.
(1) Include a brief statement that indicates what the study will tell the readership of the journal and indicate the intended department. (2) If submitting an empirical report, warrant that the study was conducted in accordance with the ethical standards of the American Psychological Association (APA). (3) Affirm that all authors are in agreement with the contents of the manuscript.

Submission.
(1) *Parenting: Science and Practice* receives all manuscript submissions electronically via its ScholarOne Manuscripts site located at http://mc.manuscriptcentral.com/hpar. ScholarOne Manuscripts allows for rapid submission of original and revised manuscripts and facilitates the review process as well as internal communications among authors, editors, and reviewers via a web-based platform. ScholarOne technical support can be accessed at http://scholarone.com/services/support. (2) Include a separate cover sheet containing the title of the manuscript, the name(s) of the author(s) and affiliation(s), and the street address and any Acknowledgments. (3) The title of the paper, but not names of the author(s), should appear on the first page of the text. (4) Normally, follow the guidelines on requirements, format, and style provided in the Publication Manual of the American Psychological Association (6th ed.); The manuscript should be double-spaced throughout. Figures should be set in Book Antiqua. Manuscripts should be written concisely. (5) Manuscripts may not be submitted simultaneously to Parenting: Science and Practice and to other journals. (6) The corresponding author accepts responsibility for informing all coauthors of manuscript submission and editorial decisions.

Review.
Manuscripts are reviewed by the Editor, members of the Board of Editors, and invited reviewers with expertise in the area(s) represented by the manuscript. Submissions must be appropriate and of moment to the readership of *Parenting: Science and Practice* and should meet a high level of scientific acceptability. A first level of review determines the appropriateness, import, and scientific merit for the journal; on this basis, the Editor reserves the right to review the manuscript further. The Editor also retains the right to decline manuscripts that do not meet established ethical standards. A system of blind reviewing is used; however, it is the author's responsibility to remove information about the identity of author(s) and affiliation(s)

from the body of the manuscript. Such information should appear on the cover sheet. The Editor will have the discretion to integrate solicited reviews into a determinative response.

After the manuscript has been accepted, authors must submit final versions as electronic files using MS Word. Each manuscript must be accompanied by a statement that it has not been published elsewhere and that it has not been submitted simultaneously for publication elsewhere. Authors are responsible for obtaining permission to reproduce copyrighted material from other sources and are required to sign an agreement for the transfer of copyright to the publisher. Authors are required to secure permission to reproduce any figure, table, or extract from the text of another source. This applies to direct reproduction as well as "derivative reproduction" (where you have created a new figure or table which derives substantially from a copyrighted source). All accepted manuscripts, artwork, and photographs become the property of the publisher.

All parts of the manuscript should be word-processed, double-spaced, with margins of at least one inch on all sides. Number manuscript pages consecutively throughout the paper. Authors should also supply a shortened version of the title suitable for the running head, not exceeding 50 character spaces. Each article should be summarized in a brief Synopsis. Avoid abbreviations, diagrams, and reference to the text in the Synopsis.

References.

Cite in the text by author and date (Smith, 2010). Prepare the reference list in accordance with the APA Publication Manual, 6th ed.

Tables and Figures. A short descriptive title should appear above each table with a clear legend and any footnotes suitably identified below. All units must be included. Figures should be completely labeled, taking into account necessary size reduction. Captions should be typed, double-spaced, on a separate sheet.

Proofs and Reprints.
Page proofs are sent to the corresponding author using Taylor & Francis' Central Article Tracking System (CATS). They must be carefully checked and returned within 48 hours of receipt. Authors from whom a valid email address is received will be provided an opportunity to purchase reprints of individual articles, or copies of the complete print issue. These authors will also be given complimentary access to their final article on *Taylor & Francis Online*. Reprints of individual articles are available for order at the time authors review page proofs. A discount on reprints is available to authors who order before print publication.

COI Disclosure Form: *Parenting: Science and Practice* requires each co-author of each accepted manuscript to fill out the ICMJE Form for Disclosure of Potential Conflicts of Interest. Please use the "COI Disclosure Form" designation to upload these forms. We will need to receive them before accepting your manuscript for publication. Please click here to download the COI disclosure form.

Appendix E

Correlations Between FFMQ-SF Subscales

Table E1

Pearson Correlations of FFMQ-SF Subscales

Subscale	Observing	Describing	Acting with awareness	Non-judging of inner experience	Non-reactivity of inner experience
Observing	1	.158	.053	-.019	.194*
Describing		1	.397**	.345**	.474**
Acting with awareness			1	.482**	.208*
Non-judging of inner experience				1	.200*
Non-reactivity of inner experience					1

*p <.05; **p <.01

Appendix F

Measures

Demographics Questionnaire

ABOUT YOU

1. **What is your gender?**

☐Male
☐Female
☐Other (please state) _____

2. **What is your age?**

_____

3. **What is your ethnicity?**

White ☐White British ☐White Irish ☐Other White background (please state) _____	**Asian/Asian British** ☐Indian ☐Pakistani ☐Bangladeshi ☐Chinese ☐Other Asian background (please state) _____
Black/ Black British ☐ Black African ☐ Black Caribbean ☐Other Black background (please state) _____	**Mixed/multiple ethnic groups** ☐White and Black African ☐White and Black Caribbean ☐White and Asian ☐Other Mixed/multiple ethnic background (please state) _____
Other ethnic group ☐Arab ☐Other ethnic group (please state) _____	

4. **What is your religion?**

☐Christian ☐Buddhist ☐Hindu ☐Jewish ☐Muslim	☐Sikh ☐No religion ☐Other (please state) _____

ABOUT YOUR CHILDREN

5. **How many children do you have/care for?**

---

6. **What age is your child/children?**

---

7. **What is your relationship to your child/children?**

☐Biological parent ☐Parent's partner (living together) ☐Foster parent	☐Step parent ☐Adoptive parent ☐Other (please specify) _____

8. **Are you the child/children's main caregiver?**

☐Yes
☐No

9. **What gender is your child/children?**

_____

10. **Do any of your children have a disability?**

☐Yes (please specify) _____
☐No

RELATIONSHIPS

11. What is your relationship status?

☐Single ☐Married / civil partnership ☐Cohabiting / living together	☐Widowed ☐Divorced ☐Other (please state) _____

EDUCATION

12. What is your highest educational qualification?

☐No formal qualifications ☐High school qualification (e.g. GCSEs, O Levels, CSEs) ☐Vocational qualifications (e.g. NVQ, GNVQ, BTEC) ☐Apprenticeship ☐A-levels (or equivalent)	☐Professional qualifications (e.g. nursing, teaching, accountancy) ☐University Bachelor's degree ☐University Master's degree ☐PHD ☐Other (please specify) _____

EMPLOYMENT

13. What is your employment status?

☐Paid or self-employment ☐Voluntary employment ☐Unemployed ☐Student	☐Housewife/husband ☐Retired ☐Other (please state) _____

HOUSING AND INCOME

14. What is your housing status?

☐ I own my home with a mortgage or loan ☐ I own my home outright ☐ I rent my home from a private landlord	☐ I rent my home from the council/local authority/other social landlord ☐ Other (please state) _____

ATTENDANCE OF COURSES

15. Have you ever had any training in a technique called Mindfulness?

☐Yes (please give details) _____

☐No

16. Have you ever attended a parenting course (e.g. Incredible Years, Triple P)?

☐Yes (please give details) _____
☐No

17. What is your household's total income from all sources over the last 12 months?

Count income from every person included in the household.
Include:

- All earnings (include overtime, tips, bonuses, self-employment)
- All pensions
- All student grants and bursaries (but not loans)
- All benefits and tax credits (such as child benefit, income support or pension credit)
- All interest from savings or investments
- All rent from property (after expenses)
- Other income (such as maintenance or grants)

Do not deduct:

- Taxes, National Insurance contributions, Health Insurance Payments, Superannuation payments

☐ Less than £5,200 per year (less than £100 per week)
☐ £5,200 to £10,399 per year (£100 to £199 per week)
☐ £10,400 to £15,599 per year (£200 to £299 per week)
☐ £15,600 to £20,799 per year (£300 to £399 per week)
☐ £20,800 to £25,999 per year (£400 to £499 per week)
☐ £26,000 to £36,399 per year (£500 to £699 per week)
☐ £36,400 to £51,999 per year (£700 to £999 per week)
☐ £52,000 to £77,999 per year (£1,000 to £1,499 per week)
☐ £78,000 or more per year (£1,500 or more per week)

18. What is your household income mostly made up of?

☐ State benefits (e.g. job seekers allowance)
☐ Benefits that subsidise wages (e.g. tax credit)
☐ Maintenance payments for baby/children
☐ Wages
☐ Other (please state) _____

HEALTH

19. Do you consider yourself to have a physical disability or mental health problem?

☐Yes (please specify) _____
☐No

FFMQ-SF

Below is a collection of statements about your everyday experience. Using the 1–5 scale below, please indicate, in the box to the right of each statement, how frequently or infrequently you have had each experience in the **last month**. Please answer according to what really reflects your experience rather than what you think your experience should be.

Never or very rarely true	Not often true	Sometimes true Sometimes not true	Often true	Very often or always true
1	2	3	4	5

1	I'm good at finding the words to describe my feelings	
2	I can easily put my beliefs, opinions, and expectations into words	
3	I watch my feelings without getting carried away by them	
4	I tell myself that I shouldn't be feeling the way I'm feeling	
5	It's hard for me to find the words to describe what I'm thinking	
6	I pay attention to physical experiences, such as the wind in my hair or sun on my face	
7	I make judgments about whether my thoughts are good or bad.	
8	I find it difficult to stay focused on what's happening in the present moment	
9	When I have distressing thoughts or images, I don't let myself be carried away by them	
10	Generally, I pay attention to sounds, such as clocks ticking, birds chirping, or cars passing	
11	When I feel something in my body, it's hard for me to find the right words to describe it	

12	It seems I am "running on automatic" without much awareness of what I'm doing	
13	When I have distressing thoughts or images, I feel calm soon after	
14	I tell myself I shouldn't be thinking the way I'm thinking	
15	I notice the smells and aromas of things	
16	Even when I'm feeling terribly upset, I can find a way to put it into words	
17	I rush through activities without being really attentive to them	
18	Usually when I have distressing thoughts or images I can just notice them without reacting	
19	I think some of my emotions are bad or inappropriate and I shouldn't feel them	
20	I notice visual elements in art or nature, such as colours, shapes, textures, or patterns of light and shadow	
21	When I have distressing thoughts or images, I just notice them and let them go	
22	I do jobs or tasks automatically without being aware of what I'm doing	
23	I find myself doing things without paying attention	
24	I disapprove of myself when I have illogical ideas	

PSS

The following statements describe feelings and perceptions about the experience of being a parent. Think of each of the items in terms of how your relationship with your child or children **typically** is. Please indicate the degree to which you agree or disagree with the following items by placing the appropriate number in the space provided.

1 = Strongly disagree 2 = Disagree 3 = Undecided 4 = Agree 5 = Strongly agree

1	I am happy in my role as a parent	
2	There is little or nothing I wouldn't do for my child(ren) if it was necessary.	
3	Caring for my child(ren) sometimes takes more time and energy than I have to give.	
4	I sometimes worry whether I am doing enough for my child(ren).	
5	I feel close to my child(ren).	
6	I enjoy spending time with my child(ren).	
7	My child(ren) is an important source of affection for me.	
8	Having child(ren) gives me a more certain and optimistic view for the future.	
9	The major source of stress in my life is my child(ren).	
10	Having child(ren) leaves little time and flexibility in my life.	
11	Having child(ren) has been a financial burden.	

12	It is difficult to balance different responsibilities because of my child(ren).	
13	The behaviour of my child(ren) is often embarrassing or stressful to me.	
14	If I had it to do over again, I might decide not to have child(ren).	
15	I feel overwhelmed by the responsibility of being a parent.	
16	Having child(ren) has meant having too few choices and too little control over my life.	
17	I am satisfied as a parent	
18	I find my child(ren) enjoyable	

PHQ-9

Over the **last 2 weeks**, how often have you been bothered by any of the following problems? *(Use "✓" to indicate your answer)*

		Not at all	**Several days**	**More than half the days**	**Nearly every day**
1	Little interest or pleasure in doing things				
2	Feeling down, depressed, or hopeless				
3	Trouble falling or staying asleep, or sleeping too much				
4	Feeling tired or having little energy				
5	Poor appetite or overeating				
6	Feeling bad about yourself — or that you are a failure or have let yourself or your family down				
7	Trouble concentrating on things, such as reading the newspaper or watching television				
8	Moving or speaking so slowly that other people could have noticed? Or the opposite — being so fidgety or restless that you have been moving around a lot more than usual				
9	Thoughts that you would be better off dead or of hurting yourself in some way				

GAD-7

Over the **last 2 weeks**, how often have you been bothered by the following problems?
(Use "✓" to indicate your answer)

		Not at all	**Several days**	**More than half the days**	**Nearly every day**
1	Feeling nervous, anxious or on edge				
2	Not being able to stop or control worrying				
3	Worrying too much about different things				
4	Trouble relaxing				
5	Being so restless that it is hard to sit still				
6	Becoming easily annoyed or irritable				
7	Feeling afraid as if something awful might happen				

SDQ

This is a questionnaire about your child's behaviour. Please give your answers on the basis of your child's behaviour over the **last six months**. **If you have more than one child aged between 3 and 11, please choose the child that you consider to have more difficulties with their behaviour.**

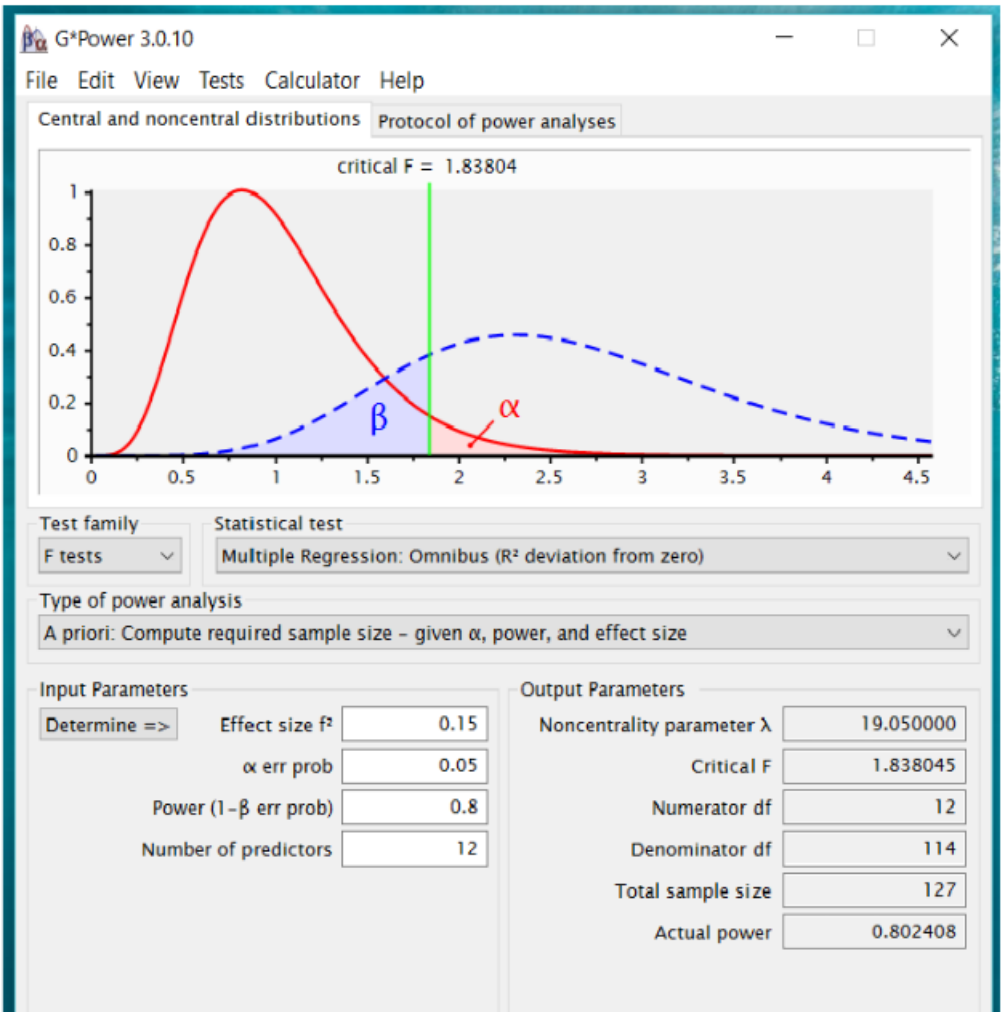
		Not True	Somewhat True	Certainly True
1	Considerate of other people's feelings			
2	Restless, overactive, cannot stay still for long			
3	Often complains of headaches, stomach-aches or sickness			
4	Shares readily with other children (treats, toys, pencils etc.)			
5	Often has temper tantrums or hot tempers			
6	Rather solitary, tends to play alone			
7	Generally obedient, usually does what adults request			
8	Many worries, often seems worried			
9	Helpful if someone is hurt, upset or feeling ill			
10	Constantly fidgeting or squirming			
11	Has at least one good friend			

		Not True	Somewhat True	Certainly True
12	Often fights with other children or bullies them			
13	Often unhappy, down-hearted or tearful			
14	Generally liked by other children			
15	Easily distracted, concentration wanders			
16	Nervous or clingy in new situations, easily loses confidence			
17	Kind to younger children			
18	Often lies or cheats			
19	Picked on or bullied by other children			
20	Often volunteers to help others (parents, teachers, other children)			
21	Thinks things out before acting			
22	Steals from home, school or elsewhere			
23	Gets on better with adults than with other children			
24	Many fears, easily scared			
25	Sees tasks through to the end, good attention span			

Note: Conduct problems subscale = item 5, item 7, item 12, item 18, item 22

Appendix G

Power Calculation



Appendix H

DClinPsy Research Review Committee Approval

D.Clin.Psychology Programme
Division of Clinical Psychology
Whelan Building, Quadrangle
Brownlow Hill
LIVERPOOL
L69 3GB

Tel: 0151 794 5530/5534/5877
Fax: 0151 794 5537
www.liv.ac.uk/dclinpsychol

13/8/2015

Anneka Attawar
Clinical Psychology Trainee
Doctorate of Clinical Psychology Doctorate Programme
University of Liverpool
L69 3GB

RE: *Exploring the role of trait mindfulness in the relationship between socioeconomic disadvantage and parental stress*

Trainee: Anneka Attawar
Supervisors: Dr Catrin Eames, Professor David Daley

Dear Annie,

Thank you for your response to the reviewers' comments on your research proposal as outlined in your letter to the RRC Chair along with the accompanying amendments and revised research proposal.

I can now confirm that your amended proposal (version 2, dated 20/07/15) and research budget meet the requirements of the committee and have been approved on Chair's Action.

Please take this decision as ***final*** approval from the committee.

You may now progress to the next stages of your research.

I wish you well with your research project.

Dr Joanne Dickson
Chair: D.Clin.Psychol. Research Review Committee.

Appendix I

Ethical Approval and Minor Amendment

From: Ethics
Sent: 09 June 2016 15:06
To: Attawar, Anneka
Cc: Eames, Catrin
Subject: RETH001031: Approval

Dear Catrin and Anneka,

I am pleased to inform you that your study has been approved. Details and conditions of the approval can be found below.

Ethics reference number: RETH001031
Committee name: Research Ethics Sub-committee for Non-Invasive Procedures
Review type: Full committee review
Title of study: Exploring the role of trait mindfulness in the relationship between socioeconomic disadvantage and parental stress (What influences stress in parenting?)
Principal Investigator: Dr Catrin Eames
Student Investigator: Miss Anneka Attawar
Department: Psychological Sciences
First reviewer: Professor Liz Perkins
Approval date: 09/06/16
Approximate end date: 30/09/17

The application was APPROVED subject to the following conditions:

Conditions

- All serious adverse events must be reported to the Subcommittee within 24 hours of their occurrence, via the Research Integrity and Governance Officer (ethics@liverpool.ac.uk).

- This approval applies for the duration of the research. If it is proposed to extend the duration of the study as specified in the application form, the Subcommittee should be notified, via the Research Integrity and Governance Officer (ethics@liverpool.ac.uk).

- If it is proposed to make an amendment to the research, you should notify the Committee by following the Notice of Amendment procedure. If the named PI / Supervisor leaves the employment of the University during the course of this approval, the approval will lapse. Therefore please contact the Research Integrity and Governance Officer at ethics@liverpool.ac.uk in order to notify them of a change in PI / Supervisor.

Best regards,

Mantalena

Mantalena Sotiriadou
Research Ethics and Integrity Officer

Research Support Office
University of Liverpool

Amendment to the Title

From: Eames, Catrin
Sent: 20 April 2017 13:24
To: Ethics
Cc: 'Attawar, Anneka'
Subject: Ethics reference number: RETH001031

To who it may concern,

As principal investigator of the study detailed below, I am emailing you to notify you of a minor amendment to the study, to change the study title.

Study details:

Ethics reference number: RETH001031
Title of study: Exploring the role of trait mindfulness in the relationship between socioeconomic disadvantage and parental stress (What influences stress in parenting?)
Principal Investigator: Dr Catrin Eames
Student Investigator: Miss Anneka Attawar
Department: Psychological Sciences
Reviewed by: Research Ethics Sub-committee for Non-Invasive Procedures
Approval date: 09/06/16
Approximate end date: 30/09/17

Minor amendment details:

We would like to make an amendment to the title of the study. The proposed new title is as follows:

New title of study: Exploring socioeconomic and psychological factors associated with stress and difficulties in families

Please do not hesitate to contact me with further comments or queries.

Many thanks,

Catrin

Dr Catrin Eames

From: Ethics
Sent: 21 April 2017 11:54
To: Eames, Catrin <eamesce@liverpool.ac.uk>
Cc: 'Attawar, Anneka' <A.Attawar@liverpool.ac.uk>
Subject: RE: Ethics reference number: RETH001031

Dear Catrin,

Many thanks for your email, and for this notification – this is very much appreciated.

If no further amendments are proposed to the original approved protocol other than the change of the study title, we think this can be noted in our files as a minor amendment – no further action is needed.

With best regards,

Mantalena

Appendix J

Study Advertisement, Information Sheet, Consent Form and Debrief

Study Advertisement

VOLUNTEERS NEEDED FOR STUDY ON WHAT INFLUENCES STRESS IN PARENTING?

What is the study about?

The study is looking at the reasons why some parents experience more stress than others. The study will improve understanding on how best to help families with stress.

Who can take part?

Parents or caregivers to a child aged 3 – 11

Parents who can read and understand English

What will I be asked to do?

You will be asked to fill out some questionnaires.

They will be anonymous and confidential

It will take 10-20 minutes

How can I take part?

Contact the researcher for more information

Pick up an information sheet at reception

Pick up a questionnaire pack at reception or ask for the online link

Who is doing the study?

Annie Attawar, a researcher from the University of Liverpool

aattawar@liverpool.ac.uk

0151 794 5534

UNIVERSITY OF LIVERPOOL

Information Sheet

Title of Study: What influences stress in parenting?

You are invited to take part in a research study. Before you decide whether to take part or not, it is important to understand why the research is being done and what it will involve. Please read the following information and ask if you would like more information. You do not have to accept this invitation and should only agree to take part if you want to.

Why is the study being done?

This study is about the experiences of parents from different backgrounds. The study is looking at the reasons why some parents experience more stress and difficulties than others. We will use this research to improve our understanding about how to help families to cope with stress.

Who can take part?

You can take part if you are a parent or caregiver to a child aged 3-11 years old. You need to be able to read, write and understand English. You need to be age 16 or over.

Do I have to take part?

No. You do not have to take part. You can stop doing the study at any time without giving a reason. If you decide not to do the study, it will not affect you or the support you receive in any way.

What will happen if I take part?

If you want to take part, please pick up a questionnaire pack from reception or follow the web link to do the study online (https://qtrial2016q1az1.qualtrics.com/SE/?SID=SV_abf5ESuXpYFcAi9). If you would like more support to do the study, please contact Annie Attawar (0151 794 5534, aattawar@liverpool.ac.uk).

You will need to fill out a consent form before you do the questionnaires. The questionnaires will take approximately 10-20 minutes to complete. Once you have finished, hand them back to reception or post them back in the prepaid envelope. Follow the online instructions for the online version.

You will not need to give your name or any other information that would identify you. The information you provide will be completely anonymous.

It is important that you take your time to do the questionnaires and that you answer honestly. The information will only be used for this research study and for no other reason. Your answers will not affect you or the support you receive in any way.

Will I get anything for taking part?

You will be asked to leave your contact details to receive a £5 Tesco gift card and to receive a summary of the final report. Your contact details will be separated from the questionnaires to make sure that your answers stay anonymous. Your contact details will be deleted once you have received the voucher and/or you have been sent a summary of the report.

Are there any risks in taking part?

We do not think that there will be any risks in taking part. However, please note that the questionnaires will ask people questions about any difficulties that they might be having such as stress, anxiety, low mood and problems with their child's behaviour. It is possible that people might become upset when answering some of the questions. At the end of the study, you will be given the details of who to contact for support if needed.

What if I am unhappy or I want to make a complaint?

If you wish to complain or have any concerns, please contact Annie Attawar (aattawar@liv.ac.uk) or Catrin Eames (Catrin.Eames@liv.ac.uk). Alternatively, you can contact the Research Governance Officer (0151 794 8290 or ethics@liv.ac.uk).

Will my taking part in the study be kept confidential?

Yes. All of your answers will be anonymous, which means that no one will know your identity or which answers are yours. Any contact details given (e.g. for the Tesco gift card) will be separated from the questionnaires. Your answers will only be viewed by the people doing the study. All information collected will be kept safe and secure on a University of Liverpool password-protected computer and will be destroyed after 10 years.

What will happen to the results of the study?

The results of this study will be written up in a report and may be published in an academic journal.

What if I want to stop taking part?

You can stop doing the questionnaires at any point, without giving a reason. If you do this, your answers will be permanently deleted. Unfortunately, once you have completed the study, it will not be possible to ask for your questionnaire to be removed because we will not know which answers are yours.

Who can I contact for more information?

You can contact the researchers doing the study who are from the University of Liverpool.

Annie Attawar, 0151 794 5534, aattawar@liverpool.ac.uk

Catrin Eames, 0151 794 5534, catrin.eames@liverpool.ac.uk

Consent Form

Title of Study: What influences stress in parenting?

Please initial box

1. I confirm that I have read and have understood the information sheet (version 1) dated 28.02.16 for the above study. I have had the opportunity to ask questions about the study. ☐

2. I understand that I do not have to take part in the study and that I am free to stop doing the questionnaire at any time. I do not have to answer any questions that I do not want to. ☐

3. I understand that I will not have to put my name on the questionnaire and that my answers will be anonymous. Once I have submitted the questionnaire, I will not be able to withdraw my answers because they will be anonymous. ☐

4. I understand that if I leave my contact details to receive a voucher or a summary of the report, they will be kept separate from my questionnaire on a password protected computer and will be deleted once the voucher and/or report has been received. ☐

5. I understand that I *must* be the caregiver of a child aged between 3 and 11 years old to take part. ☐

6. I understand that I *must not* take part if I am under the age of 16 years old, or if I cannot read, write and understand English. ☐

7. I agree to take part in the above study. ☐

Debrief

Title of Study: What influences stress in parenting?

Thank you for your help with the study!

Need more support?

We hope that there has been nothing upsetting about taking part. However, if any of the questions raised significant concerns, you are advised to contact your GP for support, and/or discuss them with someone you trust.

You can also gain support by contacting an independent support organisation such as:

The Samaritans: 116 123 or www.samaritans.org
Mind: 0300 123 3393 or www.mind.org.uk
Young Minds: **0808 802 5544 (parent helpline) or** www.youngminds.org.uk

Background to the Study

Families who are living in social deprivation and poverty often experience greater problems with stress, parenting and child behaviour problems. However, evidence suggests that parenting courses which focus only on the child's behaviour are less helpful for disadvantaged families. New evidence suggests that teaching parents to use a technique called 'mindfulness' can help parents who are experiencing problems such as stress and depression. Mindfulness is the practice of paying attention to the present moment (e.g. to our thoughts and feelings, and the world around us). We know that some people are naturally more 'mindful' than others and better at paying attention to the present moment. People that find it more difficult to be mindful might benefit from a mindfulness programme or intervention.

This study asked questions about how 'mindful' you are at the moment, and whether you are experiencing problems with anxiety, low mood or your child's behaviour. We hope to find out whether parents that are naturally more 'mindful' are protected from stress and other problems.
It is hoped that this research will support the further use of mindfulness interventions, especially for parents from deprived backgrounds.

Want to learn more about mindfulness?

Websites:

www.oxfordmindfulness.org

www.bangor.ac.uk/mindfulness

www.getselfhelp.co.uk/mindfulness

www.nhs.uk (search "mindfulness for mental wellbeing")

YouTube:

Search "mindfulness meditation track 1 by Mark Williams"

Books:

Mindfulness: a practical guide to finding peace in a frantic world, by Mark Williams and Danny Penman.

Apps:

Headspace

Calm – meditation and relaxation

For further questions or comments about the study, please contact the researcher:

Annie Attawar, 0151 794 5534, aattawar@liverpool.ac.uk

GIFT VOUCHER AND SUMMARY REPORT

Would you like to receive a £5 Tesco gift card?

Yes No

Would you like to receive a summary of the final report?

Yes No

If you have marked yes to any of the questions above, please provide your contact details

Name:

Email address:

Home Address:

Telephone number:

How would you like to receive the gift card and/or report?

Voucher: by email by post

Report: by email by post

Appendix K

Normality Testing

Normality Testing for Correlation Analysis

Assumptions of normality were tested for all variables by examining skewness and kurtosis values and by assessment of output from Kolmogorov-Smirnov tests. The FFMQ-SF and the PSS met assumptions for normality. However, The PHQ-9, the GAD-7 and the conduct problems subscale of the SDQ were significantly non-normal. Transformation of the variables did not change the distribution of the GAD-7 or the SDQ. Therefore, non-nonparametric tests were performed in the correlation analysis. Further details are provided in Table J1.

Table J1

Descriptive Statistics and Normality Testing Results

					Kolmogorov-Smirnov	
Measure	Variable	Mean (SD)	Skewness (SE)	Kurtosis (SE)	Score	*p* value
PSS	Total score	41.73 (9.87)	.22 (.21)	-.56 (.42)	.07	.188
PHQ-9	Total score	7.77 (6.25)	1.02 (.21)	.49 (.42)	.13	.000
GAD-7	Total score	6.36 (5.53)	1.02 (.21)	.33 (.42)	.16	.000
SDQ	Conduct problems scale	2.36 (1.83)	.74 (.21)	.67 (.42)	.14	.000
FFMQ-SF	Total score (minus 'observe')	63.6 (10.18)	.14 (.21)	.01 (.42)	.06	.200

Note: PSS = Parental Stress Scale; PHQ-9 = Patient Health Questionnaire-9; GAD-7 = Generalised Anxiety Disorder Asseessment-7; SDQ = Strengths and Difficulties Questionnaire; FFMQ-SF = Five Facet Mindfulness Questionnaire-Short Form.

Normality Testing for Regression Analysis

Preliminary investigation of scatterplots and p-p plots indicated that there were no major deviations from normality or linearity, and no problems with homoscedasticity in any of the regression models tested. Examination of Cook's Distance values showed that no cases had values larger than one, indicating no major problems with outliers. Further analyses revealed that there was no significant problem with multicollinearity as none of the correlations between the independent and dependent variables were above .7. In addition, tolerance values were all above .1 and VIF values were all below ten.